CALIFORNIA JOURNAL OF SECONDARY EDUCATION

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ARITHMETIC IN HIGH SCHOOL

THE SEVEN-PERIOD DAY

OUTLAWING FAD CLOTHING

AN OUTSTANDING CONTINUATION SCHOOL

IMPROVING INSTRUCTION IN CALIFORNIA HIGH SCHOOLS

THE SOVIET SECONDARY SCHOOL

SYMPOSIUM THIS MONTH

THE PLACE OF TESTING AND EVALUATION IN LEARNING
(City, County, State, and National Programs)

SYMPOSIUM NEXT MONTH

NEW DESIGNS FOR THE SECONDARY SCHOOL SCHEDULE

—Theme for the Year—

IMPROVING CONDITIONS FOR LEARNING

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EDITORIAL

THE FEAR OF TESTING PROGRAMS

"In the power to tax rests the power to destroy," so runs a fundamental axiom of the science of politics. In a similar vein the educator knows that the power to test is the power to control. Whoever formulates the formal goals and the curriculum of education is of less importance than he who sets the examinations, for he in fact determines the ends for which pupils study and teachers teach.

Recently a "rash" of testing programs has broken out, local, regional, state, and national in scope. Several factors have contributed. The colleges, confronted with unprecedented numbers seeking admission, are expanding the use of tests for purposes of selection. A marked increase in number of governmental, private, and foundation-sponsored scholarships for students has resulted in added testing programs to select scholarship winners. Increased guidance services now being provided in high schools are based upon more extensive use of testing programs. Each new national curriculum experiment has brought in its wake a battery of tests. With critical public questioning of educational results, school districts have been forced to develop or expand testing programs in which some type of normative data are made available, to answer the insistent question as to how satisfactory the particular school program may be. In the midst of this impetus toward testing, the federal government, through the National Defense Education Act, has opened its coffers so that school districts now have more money than ever before to spend for testing programs. The U.S. Office of Education has just made a major grant of research funds to be expended under the direction of John C. Flanagan for the most comprehensive assessment by tests of the talent of youth in schools ever before attempted in this country. All signs point to a major increase in educational testing that is essentially external to the local control and direction of the teacher and the individual school system.

Rumblings and grumblings about this development may be heard at the grass roots. Now and then an outburst of alarm is sounded. At national meetings over the past two years when various of the new testing programs have been discussed, we have noted an increasing uneasiness and expression of concern in the discussions from the floor. Now comes the announcement that the National Association of Secondary-School Principals, the American Association of School Administrators, and the Council of Chief State School Officers are jointly undertaking a project to assess current and

projected development in testing lest they get out of control. They propose to offer some "advice" to the directors of these various programs.

What is the source and the validity of this expressed concern?

While the American school system probably uses more objective-type, standardized tests than any other in the world, it has never been examination-ridden in the manner of European schools, where the results of schooling are measured mainly by examinations set and scored by authority external to the local school. This system never took root in the United States. In only one state, New York, has an external system of examination lasted. The county-wide examination at the end of the eighth grade which prevailed widely in this country at one time no longer remains. While an external examination system has advantages, its serious shortcomings are quickly noted by those who labor under it.

We are witnessing in this country a number of converging forces, all with a centralizing effect upon American life. Especially is this so in the schools. The need for more state and federal economic support for education; the call for a more uniform national curriculum design; a national approach to the reform of the curriculum in such fields as physics, chemistry, biology, mathematics, and foreign languages. Genuine alarm has been expressed that a state or national testing program is all that is now needed to destroy the little local control remaining in the educational system.

The point is made repeatedly that even now schools are too standarized, inflexible, and uncreative. Further expansion of state and national testing programs would only add to the rigidity and conformity of schools. The power of testing in this regard may be noted in the fact that both the mathematics and the foreign language study groups have found it necessary to persuade College Board test authorities to agree to provide alternate exams or to incorporate in their regular tests some of the features which these groups wish to include in their proposed curriculums before they considered that they would have any chance of getting schools to adopt their recommendations.

Warnings have been sounded both by local teachers and administrators that no monopoly of testing in this country should be permitted, a warning in which at least one director of a national program has joined. At the same time, local school personnel plead that one of their pressing problems is to simplify and to reduce the increasing numbers of demands that are being made for their schools to participate in different testing programs. They ask, why not one test or one program of testing for all of the different scholarships and college admissions requirements? Which shall it be? The dangers of monopoly on the one hand and the inconvenience of multiple programs on the other cannot both be solved by the same set of recommendations. This thorny problem must be resolved. Teachers and school

administrators are apprehensive lest their work be unfairly judged by state and national programs of testing. The objectives of the national testers are not necessarily in accord with the objectives of the local schools. Large-scale programs strike at an average, hence may miss the local mark. Futhermore, schoolmen reiterate that too much emphasis has been given to "objective" tests, with insufficient attention to essay and other types of comprehensive and power-type examanitions.

These fears and charges exist. They are deep-seated, persistent. They will be used, valid or not, in the argument against extension of state and national testing programs.

On the other side of the ledger, it must be noted that just as World War I gave an important initial impetus to the testing movement in this country, so World War II provided another major thrust. Significant advances have been made which are now just beginning to be considered for application in the schools. The strides forward after World War I were accompanied by serious misapplication which should be avoided this time. But such progress has been made that many additional facets of personality can now be tested with greater effectiveness than ever before. The test makers now assess the power to think critically, the ability to apply facts rather than the capacity to recall simple bits of isolated information. Educators would be derelict in their duty not to use these sharper, more effective tools for diagnostic and instructional purposes as well as for measuring the effectiveness of instruction. If teachers are to insist upon the status and rewards accorded a profession, then the standards of professional objectivity must be accepted. The number and variety of excellent examinations in the different subject fields is sufficiently great that teachers can no longer jutifiably deny their applicability to their own classrooms. With the benefit of modern evaluative techniques, teaching can and should be subjected to standard assessment that cuts across local lines. While teachers and school systems will perhaps find it difficult to accept such assessment, no valid Maginot line of safe retreat any longer exists.

We are impressed with the importance of keeping any one group from monopolizing testing in this country, whether for purposes of college admission, awarding scholarships, or guidance. Even within each subject-matter field no monoply should prevail. On the other hand, the development of good tests is highly technical and expensive, beyond the capacity of local teachers and schools. When good instruments have been developed they should be widely used and normative data secured. It is probably true that we give many more tests than we now use. But it is also probably equally true that the best of the effective tests now available are not fully used to diagnose early human potentiality and then to measure its development.

Testing and evaluation lie at the heart of the process of learning. In the next decade, it is probable that we shall learn how to use this resource more effectively. As tests are used more in the process of teaching and learning, a new avenue for improving the quality of education in schools may be opened. The essence of the new teaching machines is closely allied to testing. Their pattern is a repetition of teach, test, reward, or punish; teach, test, reward, or punish.

It is too early to determine the precise direction or outcome of the discussion of evaluation and testing that is emerging out of the present concern. We anticipate constructive results, an avoidance of the pitfalls of uniformity and monopoly, and ready disposition to use more fully and sensibly the excellent instruments and techniques now available.

R. N. B.

ANNOUNCEMENT: JOINT TESTING PROJECT

Many principals, superintendents, teachers, and counselors say that they are harassed by the demands of nationwide and statewide testing programs on secondary schools. They are confronted by an increasing number of testing programs which require more school time of students and more working time of administrators and teachers. They are troubled by the necessity of deciding what tests to select and how best to administer and interpret them.

As a Result of Test-Weariness

on the part of administrators and principals, the National Association of Secondary-School Principals, the American Association of School Administrators, and the Council of Chief State School Officers announce that they will sponsor a Joint Project on Testing during 1959–60. NASSP, AASA, and CCSSO are joining forces to review the current and developing scene in nationwide and statewide testing programs, to make recommendations to the directors of these programs, and to suggest how secondary schools might deal effectively with the complex problems growing out of external testing programs.

A Joint Committee

representing NAASP, AASA, and CCSSO will meet soon to advise on the objectives, scope, and procedures for the Project. The membership of the Joint Committee and the director of the study will be announced shortly. These Technical Consultants to the Joint Committee have already accepted appointments: Ralph W. Tyler, Director, Center for Advanced Study in the Behavioral Sciences, Stanford, California, and Glyn Morris, Assistant Superintendent for Pupil Personnel Services, Lewis County, New York.

The purpose of the Joint Project is (1) to collect and publish hitherto unavailable information on nationwide and statewide testing programs and (2) to make suggestions on the proper role of testing in our schools. It is agreed that testing has an important role in American education, but there is pressing need for definition and clarification of its role. The Joint Project will come to grips with this major issue.

Note: Write to *NASSP Spotlight* for a single free copy of *Some Leading Questions on Testing*, which indicates many of the issues in testing to be dealt with by the Joint Project.

—NASSP Spotlight, Sept.-Oct., 1959

HOW CAN THE INSTRUCTIONAL PROGRAM IN CALIFORNIA HIGH SCHOOLS BE IMPROVED?

BY FRANK B. LINDSAY*

It is a truism that high schools try to respond to the demands of their communities. The issues are (1) to whom shall they be responsive, what voices shall they heed, and (2) how may they do this without abrogating their own sense of their mission, without losing their consciousness of direction? The American high school was not founded by sudden public whim nor conceived in terms of a narrow educational base. A good recent review of the beginnings of the high school and its mission as projected by the people of the United States is contained in an address, "A Historian Looks at the American High School," delivered by Henry Steele Commager at the December 1957, Conference at the University of Chicago. In his words,

> ". . . we require our schools to train citizens competent to govern themselves, to absorb and Americanize millions of newcomers from the Old World and elsewhere, to encourage and strengthen national unity, and to teach habits and practices of democracy and equality and religious tolerance."[1]

In passing it should be noted that Historian Commager does not restrict the mission of the American high school to preparation of its graduates for admission to college nor does he propose that it ever was intended to copy the curriculum of the European gymnasium or lycée. In fact, he states,

> ". . . it is true that not until well into the twentieth century

* Chief, Bureau of Secondary Education, State Department of Education, Sacramento, California. Based upon his remarks to the State CASA Convention in San Francisco, December 1, 1959.

[1] *The School Review*, Spring, 1958, University of Chicago Press, pages 3–4.

did any European country provide an effective system of free public secondary education for all who desired it. . . . Only since the second World War has Britain begun to provide for its 14–18-year-olds as adequately as the United States did sixty or seventy years ago."[1]

Commager asserts that the comprehensive high school is the pioneer not only in time but in program as well, which other nations of Europe and Asia seek to emulate. What strange mental disorder, then, has afflicted some of our people that they would have high schools turn their backs upon a century of world leadership in education to abandon, as he says, "the amalgamation of preparation for college and for work; . . . the emphasis upon student government and student activities; . . . the openness of the curriculum and of the whole academic course (the easy, almost unconscious merging into college); (and) . . . the emphasis on doing in the processes of learning"?

It is commonly said that comprehensive high schools have dual functions: to train for occupational employment and to prepare for admission to college. In a sense this is a misleading statement. The comprehensive high school has a single mission: to make Americans. As Americans, all young people are citizens and this is the central function of the comprehensive high school. As young citizens some will contribute to the national economy by entering employment immediately or shortly after graduation, while others will be deferred until they can achieve added knowledge and skills for entrance into professional vocations. For both groups the high school has equal responsibilities.

If one accepts this definition of the comprehensive high school, it is at once evident that three implications emerge. The first is that high school teachers and administrators must constantly revive their conviction of the purposes of the American high school and in that light review the development of curriculum and provisions for course offerings. The second implication is that educators must take leadership in interpreting to people of their communities the real objectives of high school education, and in organizing informal study groups of parents and interested members of the community to help them gain understanding of the instructional program. And the third is to make certain that the schools respond to the desires of the entire community and not trim their program to the demands of articulate minorities whose own frustrations lead them to seek a scrapegoat for relief of their dissatisfactions with their own positions in society. It seems difficult for some attorneys, physicians, and even college professors resident in a given community to recognize their numerical unimportance and to realize the impropriety of their attempting to speak for the whole range of parents and children or to pontificate upon educational problems outside

the range of their limited specializations. The antidote is to obtain representations from the many component groups which comprise the total community.

This may well be the place to note that there appears to be a tendency of some readers of Dr. James B. Conant's report on "The American High School Today" to ignore the breadth of his twenty-one recommendations and to place undue emphasis upon No. 9, *The Programs of the Academically Talented,* by urging this curriculum upon all high school students. Inevitably this must result in a revival of the malpractice known as "formal discipline," disguised with the cloak of respectability borrowed from Dr. Conant without his intention or consent.

And while I am referring to Dr. Conant, let me report that California high schools quite generally have adopted some years in advance of his Recommendation No. 17, the conduct of summer schools. Following is a summary of the enrollments just compiled from reports of 1959 summer high school sessions. In 1959 summer high schools were operated by 158 of the 329 districts maintaining high schools compared to 116 districts the previous summer. There were 245,695 individual enrollments in classes, an increase of 43 per cent over 1958. Of particular interest is the fact that 25.8 per cent of these were in mathematics, 19.2 per cent in English courses, 15.4 per cent in sciences, and 5.9 per cent in foreign languages.

Of the 44,210 students enrolled in mathematics classes, 18,759 were in algebra, beginning and advanced, and 7,867 in plane geometry. A great many college preparatory students, 33,718, took personal typing—a tribute to the advertisements of manufacturers of portable typewriters which hold out the promise of better college grades for typewritten term papers. Another 14,433 enrolled in United States history in order to fulfill this graduation requirement and to open up their junior year schedules to accommodate additional mathematics or science, or to begin a second foreign language. The 10,103 students in classes of foreign languages were distributed as follows: 7,904 in Spanish, 1,066 in French, 836 in Latin, 253 in German, and 44 in Russian. Comparison with enrollments in previous years demonstrates that remedial and make-up work no longer receive major emphasis; that able students are getting opportunity to broaden their high school experience and diversify their regular term schedules.

A source of considerable assistance to the Bureau of Secondary Education as it works to help improve high school instruction is the Curriculum Committee of the California Association of Secondary School Administrators. It presently has subcommittees for mathematics, science, and foreign language instruction with wide memberships not only of high school principals having college majors in these fields, but of the curriculum coordinators from districts and counties. These subcommittees provide a channel

for the distribution of information and recommendations to the high schools through CASSA regional and district meetings.

The Bureaus of National Defense Education Act Administration and Secondary Education held a meeting early last summer on Planning and Effecting Modern Methods and Techniques in Foreign Language Instruction. We assembled Elton Hocking of Purdue University; Charles F. Hockett of Cornell; Marjorie C. Johnston of the U.S. Office of Education; A. T. MacAllister of the Modern Language Association; Mary R. Haas and Karl E. Schevill of University of California, Berkeley; Edmond E. Masson of University of California, Santa Barbara; William F. Roertgen of U.C.L.A.; and Gustave Mathieu of Pomona College; as well as foreign language supervisors from school districts. The handbook compiled from their deliberations has received favorable acceptance by many language teachers.

At the November 14–15 Asilomar Joint Conference of the Foreign Language Association of Northern California and the Modern Language Association of Southern California, the State Department of Education was urged to develop through Statewide committees a framework for each principal foreign language commonly taught in public schools, together with detailed curriculum guides, in order to insure articulation between levels and to instruct teachers in approved modern techniques. It is somewhat ironical that California is being treated to a spectacle of some vocal groups insisting that teachers be freed to follow entirely their own devices at the very time that some hundreds of competent classroom teachers are requesting State and central office leadership to make their teaching more effective.

In the field of foreign languages there are few serious differences of opinion among high school teachers as to what needs to be done, whether or not they feel equipped to utilize the approved methods of audio-lingual instruction. In the case of high school mathematics, however, there has appeared to exist considerable confusion. Practically upon a hit-or-miss basis teachers in widely dispersed districts have attempted to follow the schools of mathematical thought espoused by such authorities as E. G. Begle of the Yale School Mathematics Study Group; the Illinois group under Max Beberman; the pronouncements of Howard Fehr at Teachers College; the Maryland study sparked by John Mayor of A.A.A.S.; and the Program for College Preparatory Mathematics contained in the Report of the Commission on Mathematics of the College Entrance Examination Board.

To attempt to achieve some degree of consensus for the guidance of high schools, the Bureau of Secondary Education has invited twelve of the foremost authorities among both the writing groups and creative mathe-

maticians of the American Mathematical Society to meet with us. Members of the Bureau staff will listen and observe as the proponents of the several movements in mathematics set forth their areas of agreement and points of difference; they will also have to justify both to such men as R. L. Wilder of the University of Michigan, vice-president of the American Mathematical Society; Karl Menger of Illinois Institute of Technology; and William Meyer of the University of Chicago. There will also be participants from departments of mathematics on the campuses of the University of California and Stanford University. This illustrates the role assumed by the Bureau as an agency for coordination of instruction in secondary schools.

The American Institute of Physics is publishing a handbook for self-study groups, especially designed for administrators and school board members, on the subject of improvement of high school courses in physics. The Bureau has been instrumental in bringing Dr. W. C. Kelly, Educational Director of that organization, to address a section meeting at the annual conference of the California School Boards Association, on December 4. The American Institute of Physics, together with its affiliated Association of Physics Teachers, is thus trying to advise high schools to steer a safe course between the Scylla of the Harvey White film series and the Charybdis of the Physical Science Study Committee emanating from the Center at Massachusetts Institute of Technology. Whether high school educators must stuff their ears with wax to survive the blandishments of rival physics sirens only the future can confirm.

The foregoing instances illustrate the lively ferment on-going among California high schools. A major issue in all these undertakings, whether in foreign language, mathematics, or science, is the elimination of obsolescent content and its replacement by topics significant for today. An important corollary is to realize that the objective of course formulation is not to overcrowd the course but to exercise utmost economy of subject-matter in order to insure that student attention may focus upon essential concepts and principles. High school is not the place or time to try to teach an introductory college course. Teachers who imitate college professors not only fail to instruct adolescents but will inevitably disgust, discourage, and drive away from their subject some of the most potentially creative minds who otherwise would find intellectual challenge in the discipline.

There is a vociferous minority which loudly proclaims these days that the only way to promote learning and maintain standards is to "get tough." Their gratuitous advice to teachers is (1) to beat knowledge into the heads of their students, (2) then to deaden their capacities with wearisome drill and routine homework, and (3) finally to weed out ruthlessly all but the most passive members of their classes whose low thresholds of energy and

imagination make them ready victims of pseudo-intellectual brain-washing. The pursuit of a truly intellectual discipline is an exciting adventure, and homework should be a continuation of independent discovery on the part of the student. I recall that when I studied physics in high school I constructed for our home and barn the first stand-by emergency electric-lighting system powered by wet batteries that had appeared in our rural locality. My teacher encouraged me to figure voltage line-drop and other limiting factors in my amateur installation; evidently he did not feel that my self-initiated essay into life-adjustment education interfered with my mastering essential subject-matter.

Those who would greatly lengthen the school day or school year may be defeating the very ends of improved learning they profess to seek. The classroom is only a place to begin learning, to get the knack of doing in any area of mental endeavor. Along with much that is meretricious, television broadcasts and magazines are packed these days with plays and articles which give connection and meaning to school studies. Within the past twelve months there have been showings of "Great Expectations," "Romeo and Juliet," "Richard the Third," "The Turn of the Screw," and an adaptation of Shaw's "Pygmalion." Teachers must learn how to utilize these aids to learning as they occur. An alert instructor will not let his class be so bound to a rigid routine as to fail to make the most of contemporary events. Psychological moments which enhance learning must not be wasted because the course has made no provision to consider a given matter until next semester or another year.

This assumes that a teacher not only has sufficient familiarity with his subject to be able to approach ideas from any number of directions, but that he is also a skilled practitioner of the learning process and appreciates adolescent tolerances for mental effort. Wordsworth wrote that the child is father to the man, and the bodies of adolescents are still growing and developing. Young people must have time for exercise and recreation if they are to mature properly.

If one is obliged to seek an issue in this connection, it would be to talk sense about education courses. There is a misapprehension abroad that somehow the deficiencies of subject mastery observed in certain teachers is a consequence of their exposure to study about the range of individual differences, the nature of the learning process, and the ephemeral impressions of textbook information unsupported by utilization which gives meaning and insight. It is not usual for academicians to denounce an engineer for availing himself of whatever he can borrow from mathematics, chemistry, or physics which may be relevant to realize his project. In the same manner an educator in the public schools practices an applied art to which the social sciences importantly contribute. Customarily a prospec-

tive teacher has studied four or more years in his academic subject while his acquaintance with sociology and psychology as applied to learning rarely exceeds a year in time of his total preparation. If a high school teacher sometimes proves ineffective in grasp of his assigned subjects of teaching, the fault surely lies with his major professors, and not with the college department of education whose faculty manfully tries to help him achieve order and pattern out of his intellectual confusion. For public schools could not countenance the haphazard and slipshod presentations of subject-matter which sometimes is observed in the teaching of courses by young college instructors.

I opened these remarks with reference to the responsibilities of the comprehensive high school to the community in which it is situated. Through some specific illustrations I tried to indicate some of the endeavors which currently characterize the efforts of secondary schools to improve instruction in foreign languages, mathematics, and science. In this connection it should be noted that teachers of English and social studies likewise are struggling to find solutions to their problems of teaching students; and concerted attempts of teachers to grapple with problems of instruction are by no means confined to the academic fields.

There remains an area of relationships between teachers and parents which desires exploration. Young people in high school are members of families. High schools may have too often overlooked the instructional resources presented by the fathers and mothers of their students to further learning. The essence of the problem is not just to cement alliance between school and home for urging young people to attend to studies. It is rather to draw upon family experiences to illuminate and make meaningful the textual matter discussed in classrooms. That is why assigned homework should not become so burdensome as further to segregate children from the family circle during evening hours and on week ends when they should be free to enjoy association in the same pleasures of talking together, of viewing television, or of taking excursions to mountains or seashore.

It is indeed a paradox if the school, which gives lip service to richer home life, then evokes feelings of guilt at neglecting homework if students participate with parents in joint undertakings. Social development is an objective frequently affirmed by educators; then the school should not prohibit opportunities for young people to mature themselves through natural association with their parents and adult acquaintances of the family. I am sure that the imminent reorganization of the secondary school will not be confined to the content of curriculum but will find ways to release students from the shackles of the classroom and to utilize consciously the potential contributions of home and community for their learning.

THE SOVIET SECONDARY SCHOOL: WEAKNESS AND STRENGTH

BY HAROLD B. ERICKSON*

Accounts of Soviet education in recent years have often seemed to establish a stereotype of a highly successful school system. Notwithstanding these accounts and certain much publicized Soviet technological successes, a study of Soviet periodicals reveals that the Soviet secondary school is no monolith of perfection.

This article proposes to assess the weakness and strength of the Soviet secondary school by drawing material and interpretations from a review of the important official Soviet educational journal, *Sovetskaya Pedagogika*.[1] In this journal the school organization, function, and instructional methods receive a good deal of criticism from Soviet officials. While this criticism, in itself, must be considered a dynamic quality which can improve education in the long run, the two big questions to be answered are: (1) On what basis have the schools been criticized? (2) Why have these schools apparently produced far beyond expectations?

Sovetskaya Pedagogika is not Soviet propaganda for foreign consumption. It may contain misstatements, and it may exaggerate, but it always contains information which the Soviet government wants its teachers to have; sometimes it is quite candid, as when Khrushchev officially acknowledged that "there are great deficiencies in the work of our schools and in-

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[1] An English translation of *Sovetskaya Pedagogika* was reviewed for this article. This translation is published in the United States by the International Arts and Sciences Press, 33 West 42nd Street, New York, under the title *Soviet Education*. Seven issues, from November 1958 to May 1959, were reviewed, and all references and quotations in this article are taken from these issues.

stitutions of higher learning which can no longer be tolerated." Much of the material in this journal that reveals deficiencies and proposes changes was obviously stimulated by the critical statements and proposals recently made by Mr. Khrushchev in his role as Party leader.

Basis of Criticism

In order to achieve more perspective, the deficiencies mentioned have been classified and evaluated under certain broad categories. The current key deficiency around which most criticism seems to revolve is similar to that made of the American schools by John Dewey and others at the turn of the century, i.e., the isolation of the school from life.

1. THE ISOLATION OF THE SCHOOL FROM LIFE. Soviet secondary schools, as our secondary schools of the past, have emphasized college and university preparation. The Soviet government now proposes to change this situation and provide more adequately for pupil needs by means of a new instructional program which would combine study in school with productive labor in agriculture, industry, and business affairs. It is not clear, however, how much this movement is motivated by a technique which will obviously increase production by adding to the labor force, and how much it is motivated by the conviction that such a program will result in a superior learning product. There is also some Western speculation that the program might have been promoted to reduce the amount of critical thinking the present academic curriculum might engender. At any rate, the union of study-with-work is vigorously being promoted in the Soviet Union as an improved learning technique, a superior vocational guidance system, and as a democratizing influence.

2. INADEQUATE COMPULSORY ATTENDANCE LAWS. From some published material we might easily get the impression that all youth are receiving an extensive public school education. This is far from the situation as revealed by *Soviet Education*. Recurring articles in this journal propose that certain serious defects in implementing universal compulsory attendance for children must be remedied. Legislation establishing compulsory attendance for eight years is urged.

3. TOO MUCH RESTRICTION OF TEACHER ACTIVITIES. The nature of articles found in *Soviet Education* gives evidence that their school system is, in fact, highly centralized and restricted. This criticism is typified by one writer who asks: "Why . . . is it necessary to require [the teacher] to spend 8 lessons on the study of Turgenev's 'Mumu' and 10 lessons on 'Frost—the Red Nose' of Nekrasov? The teacher himself must manage the distribution of school time, and it is obvious that it will be employed more rationally."

4. INADEQUATE DISCIPLINE AND THE TEACHING OF MORALS. This category takes on many overtones of communist ideology,

but the journal gives evidence that the discipline of youth is of concern to Soviet teachers. American teachers will be interested to know that even Soviet schools have discipline problems. To quote, "The school is not now sufficiently effective in teaching pupils good behavior at school, at home, in the street and other public places."

The basic criticism is that the methods for developing discipline and teaching morals have been "stuffy and inadequate." Another sample quotation brings out the nature of this inadequacy: "The formation of moral concepts and understandings cannot be accomplished only through verbal methods. We must consider the fact that a knowledge of moral norms is not in itself a guarantee of moral conduct. It must be developed in the context of life experiences."

5. INADEQUATE TEACHING METHODS GENERALLY. The school system is generally criticized as having weak, unimaginative teaching techniques which do not produce the kind and amount of learning expected from the effort expended by school and pupil. Specifically, criticism is directed against abstractness-in-lessons, and learning-by-rote without concern for meaning. Educators are admonished to develop systems whereby students may work independently at times, using reference books, measuring instruments, and laboratory equipment.

The Soviet criticism relative to audio-visual materials suggests strongly that the school up to this time has not made much use of such teaching devices as films, radio, television, and tape recorders.

Even in the teaching of such subjects as physics, chemistry, and mathematics, in which the Soviet school has been considered strong, there is criticism. Instruction in these subjects is referred to as old-fashioned, routine, unrelated to real situations, and promoting inadequate learning. This criticism is partly related to that which claims there is too much isolation of school from life. If all students are to spend some time in work experience, the critics insist, the study of the physical sciences must have some immediate practical value. However, on the other hand, certain mathematicians have objected to the present mathematical training in the secondary schools on the grounds that it is already too practical, and they demand that basic alterations be made in the mathematics program.

6. INADEQUATE TEXTBOOKS. Textbooks are variously referred to as outdated, encumbered with detail, and tediously presented. The head of the People's Commissariat of Education described them as "sawdust and vaseline," which makes them sound very unpalatable indeed.

Considering the practice in the Soviet Union which makes certain textbooks obligatory in all schools, one can understand why they might be described in this way. But this situation appears ready for change since Mr. Khrushchev has stated that this practice makes for "textbook-writer monopolists and prevents the improvement of quality."

7. OVERLOADING OF PUPILS WITH HOMEWORK. There is a good deal of criticism about this kind of overloading. Some Soviet studies show that pupils are overloaded with homework and that this is a cause of ill-health. Also, too much homework, it is claimed, causes some students to become opportunists and select what they will do only on the basis of the probability related to being called on in class the next day.

There seems to be no reason to disagree with *Soviet Education* that the secondary school has been and still is deficient in many respects. However, in view of this admitted weakness, how does one account for the success of the school as suggested by Soviet technological advances?

Sources of Strength

This writer believes that the strength of the Soviet school system does not lie in its organization or in its methods; these are under attack in the Soviet Union and with good reason. The main strength seems to lie in certain motivational forces in the life of the Soviet student which can be listed as follows:

1. A constantly advertised purpose and set of goals. The repetitious and often coercive approach used by the Soviets might at times be repugnant to Western youth, but the value in having purpose and well-defined goals should not be underestimated.

2. An aggressive emergent nationalism. The energy that Americans derived from "manifest destiny" in the last century is incalculable. The man on the frontier could put up with many inconveniences as long as he knew that things would inevitably get better and that he was important in the course of history. The Soviet government is currently pursuing a policy of "manifest destiny" which has supported its aggressive nationalism.

3. A generally low standard of living which can be improved for the individual by diligent learning in the school. In a climate of respect for intellectual achievement, learning and the school become important no matter how inadequate the school itself is.

4. A growing faith in the power of science to solve all problems, and to promote growth and development. With such faith, the school takes on increased importance as the place where science is taught.

5. An emphasis upon personal involvement in all aspects of life. The individual is expected to become an active participant in all community affairs, and, as a student, to take an active part in the school. This capitalizes on the motivation stimulated by ego-involvement. The study-work program now advocated for the secondary schools could tend to increase this stimulation.

Implications

This analysis of the Soviet secondary schools suggests three important considerations for education generally.

The first is that, regardless of the country or the national school system, students, teachers, and critics have many things in common. It is possible that some international communication could be based upon this commonality.

The second is that the self-criticism of the Soviet school not only points up inadequacies, but it also represents in the main a healthy dynamic quality which can promote invigoration and change. The call for a closer tie between the school and real life, the advocacy of more inclusive compulsory attendance, the feeling that the state must relinquish detailed control over the teacher, the request for competition in textbook writing, the concern for productive teaching methods, and the humane concern about the overloading of pupils, all can be considered "straws in the wind"—hopeful signs for the improvement of a system of education.

The third point is that motivation is an extremely important factor in a school program. School buildings, equipment, and teachers we have, but we are not always getting the learning product we expect and desire. Often our school programs lack motivation. This writer believes that we would do well to understand the energizing forces behind the accomplishments of the Soviet schools and their pupils. Purpose, goals, aggressive nationalism, ego-involvement, and the acknowledged respect and rewards for intellectual effort and achievement—all these grant to Soviet education a motivational impact that is of no small importance.

We need not return to a low standard of living to achieve this motivation, but we can encourage more respect for the thinking individual. We need not return to an aggressive nationalism, but we can better define our purpose and involve our students in worth-while goals.

OATH OPPOSED

The American Council on Education reasserted last week its opposition to a loyalty provision of the National Defense Education Act requiring students who receive loans or fellowships to file an affidavit disclaiming membership in, or support of, any organization seeking to overthrow the United States Government by illegal means.

A resolution from the council's Committee on Relationships of Higher Education to the Federal Government states general areas of opposition to the affidavit: (1) It discriminates against students as compared with other persons who receive Federal assistance, and against needy students who become targets of distrust when they are compelled to seek assistance. (2) It is unfair in placing the signer in possible jeopardy because of his private beliefs, not his overt actions. (3) It is inappropriate in requiring such an affidavit as a prerequisite to financing an education. (4) It is superfluous and ineffective as a means of combating or detecting disloyalty and subversion. (5) It involves Government interference in the affairs of free institutions.

—N. Y. Times, November 29, 1959

ORGANIZATION OF THE SEVEN-PERIOD DAY

BY F. WILLARD ROBINSON*

Local boards of education and school administrators are giving increased attention to the plan of organization of secondary schools. Not entirely a new development, there has been increased interest lately in the organization of a seven-period school day because of the continued encroachment on the curriculum of added requirements for graduation, and increased pressure for enrichment and remedial opportunities. Dr. Conant, in his important report on the American high school program, made the following recommendations regarding the organization of the school day:

1. There should be at least six periods, exclusive of physical education and driver education.
2. A program of seven or eight periods of 45 minutes each is recommended. Industrial arts and science laboratory courses involve two periods.
3. A six-period day is too rigid to allow for a full program, particularly in the case of academically talented students.

Because of the interest aroused by Dr. Conant's report, local districts are re-examining their secondary schools in the light of his proposals. His recommendation that the number of periods per day be increased involves a greater number of administrative problems than do any of his other recommendations. Regardless of the difficulties involved, a number of California secondary schools already are embarking upon experimental programs.

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It might be well to consider some of the administrative problems that must be considered in such a basic organizational change.

Let us assume that the values of a seven-period day plan of organization are recognized and accepted, and that the decision has been made to convert the secondary schools from a six to a seven-period day. What problems will be encountered, and what decisions will have to be made? The chances are that the experiment will be a failure unless thorough plans are laid. Basic to its success is a careful consideration of all aspects of the new organizational plan. In particular, the following provisions must be made:

1. *That the change-over from a six to a seven-period plan of organization be structured and sponsored officially by the school district.*

   This is particularly important in a district where there is more than one secondary school. The problems involving equal teacher load, finance, and curriculum become so involved that a "wildcat" experiment could soon become a center for irritation, frustration, and discouragement. Any change or basic reorganization, in order to be effective, must come out of group action under the official sponsorship and supervision of the school district.

2. *That the change-over from a six to a seven-period plan of organization be adopted as an experiment and that it incorporate the following general conditions:*

   a. The objectives, purposes, and goals should be specifically stated.
   b. The experiment should be limited to a specific and predetermined period of time.
   c. The plan for reorganization should be evaluated in terms of these objectives.
   d. The evaluation instrument should be formulated and validated at the time the total experiment is structured.

3. *That increased supply allotments be apportioned on the basis of the added need and in relation to the approved program.*

   Generally, the addition of an extra period on the school day will result in increased enrollments in the fine arts, the industrial arts, and the homemaking departments. It is apparent that the need for extra supplies increase in a greater proportion than the increase in the number of total sections in school because of the nature of the curriculum and needs in these areas. This would be increasingly true as enrichment sections in science, for example, were established.

4. *That provision be made to increase the assignment of teacher time*

to give adequate and realistic implementation to the seven-period day plan of organization.

Professional teacher's organizations are becoming increasingly concerned over equalizing teaching loads. The next few years will undoubtedly see the establishment of the "basic" teaching day. Primary factors will be the number of teaching periods and the number of pupil contacts per day, as well as extra assignments. In planning the seven-period day, a district cannot reasonably impose an extra load upon a teacher. If the district is dedicated to the premise that there shall be no extra pay for extra services, then provision will have to be made to increase the staff in proportion to the planned expansion of the program. However, the basic teacher load computed in terms of teaching time and pupil contacts could be increased with teacher approval and adequate compensation. The idea is not new, for adult school teaching by regular staff members is usually organized on this basis.

5. *That the seven-period day NOT be required of all pupils within the school.*

   The establishment of individualized programs of study should encompass not only the choice of subjects but also the number of classes in which a pupil enrolls. The requirement that all pupils take the same number of classes each day is not consistent with the increasing emphasis on individualized programs of study. Only pupils who have need and desire for enrichment or remedial work in a given area should be afforded the opportunity for this experience. Moreover, the individual pupil's physical and emotional capacity should be factors in determing the length of his school day.

6. *That the primary purpose of the seven-period day be to provide remedial, enrichment, or intensified opportunity in established or related subject areas rather than to provide an added activity period.*

   The school should not try to "manufacture" new elective subjects just to fill out a seven-period day. In general, the program should center around the established required subject areas, and such established electives as music, art, industrial arts, business education, homemaking, student government, and school publications. Our high schools already offer a large variety of subjects. The student's problem is that he cannot enroll in enough of these subjects to round out a comprehensive schedule within the limitations of a six-period day, and still meet the requirements for graduation.

7. *That the seven-period plan of organization begin with a limited pro-*

gram that can be expanded gradually as the need and the facilities require.

The decision as to whether to adopt a six-period or seven-period plan of organization need not be formulated as an "either-or" proposition. Flexibility of program is consistent with sound educational and administrative procedure, and the exercise of gradual and sound change will be important to the success of the program.

8. *That a school district begin the seven-period day plan of organization only when it is able and willing to finance the added costs inherent in the program.*

   The program of added costs resulting from the need for extra supplies and the extra demands upon teaching personnel have been mentioned. Some districts have not fully considered this problem and as a result have met with serious difficulty in administering the program. The problem of added cost must be faced realistically at the time of initial planning. Estimating the added costs in terms of increased teacher time and added supplies is a comparatively easy task, once the enrollments and the extent of the program have been established.

It has not been the purpose of this paper to make a case for or against adoption of a seven-period day. It is generally recognized that the six-period day has within it such basic weaknesses that school administrators are being pressed to evaluate and experiment with more flexible programs. The seven-period day plan of organization has been offered as a promising alternative, and one which has gained considerable attention since Dr. Conant's espousal. The administrative problems inherent in its organization, however, will require careful thought and continued planning.

SCHOOL ADMINISTRATORS' RESOLUTION ON TESTS

The importance and usefulness of tests in evaluation and teaching cannot be overestimated. There is a great need for improved and more adequate instruments for evaluation of many kinds of educational growth. The misuse of tests and the misinterpretation of test data continue to be a glaring danger to good educational programs. Any test instrument should be selected and used in terms of what a particular school had intended to teach. To judge a school solely on the basis of data derived from any battery of examinations is an invalid and dangerous venture. State or national examination results, used without due regard for the educational objectives of the school and the nature of the student body, are likely to be misleading.

Resolution No. 13 adopted by the American Association of School Administrators in convention, February 18, 1959.

A PROGRAM FOR MAINTENANCE OF ARITHMETICAL SKILLS—THE TEACHERS' GREATEST NEED

BY G. W. BROWN*

During the past year a questionnaire submitted to elementary and secondary school mathematics teachers in a California school district, included the question "What are some of the problems you face at the present time in your mathematics teaching?" Of 228 responses to this question, 106 or 45 per cent identified as a serious problem the inability of their pupils to perform the fundamental operations. The problem of providing for individual differences ran a poor second with but 53 responses, or 23 per cent of the total.

The widespread concern of mathematics teachers with pupil deficiencies in multiplication, addition, and other fundamental operations is not unique to this group nor to our era. However, neither research nor expert advice has offered teachers a clean-cut solution to this problem. Certainly the literature does not reveal the variety of validated procedures that one would expect considering the interest in the problem and the length of time it has existed. The purpose of this article is to outline a maintenance of skills program developed in accordance with the principles of learning and refined after use in practical situations.

For a moment compare developing skill in a mathematics fundamental with developing a physical skill. If it were possible to observe simultaneously basketball practice in a junior high school, a high school, a junior college, and a university, on any given Monday afternoon in January, we would no doubt find that at each practice considerable time was devoted to some basic fundamentals of basketball. Moreover, we would probably observe that the boys at all levels were practicing on the same funda-

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mental and in much the same way. Thus it seems that for the development of a physical skill, experts operate on the assumption that the basic skills need to be systematically reviewed and refined. At no stage in the athlete's development is it expected that he has mastered the skill and needs no further practice in it. As a further example, note how much time the professional baseball player spends, simply throwing the ball in practice. Now contrast the attitude of the athletic coaches with the attitude of a succession of mathematics teachers. The sixth-grade teacher commonly expects her pupils to be able to handle fractions skillfully. The algebra teacher expects her pupils to be adept at all fundamental operations, and the calculus teacher in college is impatient with students unable to factor or handle trigonometric identities. However, at no stage along the line is there a systematic attempt to assess the backgrounds and skills of the pupils in the class and provide an organized plan for improving weaknesses. Teachers generally agree that skill in the fundamental operations is a desirable outcome of the mathematics program at each grade level. However, it is often only the teacher introducing the operation initially who accepts a sincere responsibility for developing and maintaining a skill in it. Teachers must recognize that until the mathematics instructor at each level accepts the obligation to develop a systematic program for maintaining skills, the high level of competency that our society demands will not be achieved. When a consultant sat down with the group of teachers mentioned above to discuss the problem of pupil deficiency in skills, not only were teachers annoyed that the problem existed, but implied continuously that its fundamental cause lay in the inadequacy of a preceding teacher.

A baseball expert could reel off illustrations by the dozen of ball players arriving in the major leagues who were inadequate in some aspect of the fundamentals. Even the great Babe Ruth changed from pitcher to the outfield after several years of major league experience and learned the fundamentals of a new position after reaching the big time. In the same way a sixth grader can become expert at addition, an eighth grader can learn to multiply and a student of trigonometry can become effective with per cents. Two things only are needed: (1) assessment to locate the weakness area, and (2) a systematic program to build up the weakness area. Let us now examine these two steps in detail.

Assessment of Pupil Proficiency in the Fundamental Operations

A basic principle in the educative process is that pupils differ in ability. It would be a mistake to assume that at any level competence in a skill is possessed by all members of a randomly selected class. Thus recognizing that deficiencies are apt to occur, a teacher avoids frustration and annoyance by posing several questions and proceeding to gather answers to them. Concentrating on a narrow area of the fundamentals such as multi-

plication, adding fractions, or the first case in percentage, the teacher poses these questions:

1. Who in the class is deficient in this area and who isn't?
2. Where shall the line be drawn between proficiency and deficiency?
3. How accurately can I pinpoint the area of weakness?

In order to gather data to answer these questions the teacher must first use his knowledge of the process and its trouble spots to develop a survey test of the skill. Using subtraction as the fundamental that is being assessed the teacher might develop examples such as the following:

a.	765 −423	Subtraction without borrowing
b.	535 −417	Borrowing in the ones place only
c.	713 −251	Borrowing in the tens place only
d.	811 −247	Borrowing in both the ones and tens places
e.	740 −226	Zero in the ones place (Minuend only)
f.	704 −432	Zero in the tens place (Minuend only)
g.	800 −676	Zero in both tens and hundreds place (Minuend only)
h.	747 −303	Zero in the subtrahend

Although other subtraction types can be isolated, the eight examples above illustrate the most common sources of error. The development of a diagnostic instrument is treated in detail elsewhere.[1] The purposes under discussion here can be achieved by designing at least four and probably not more than seven examples of each type of subtraction and arranging them randomly in a test. In type C, for example, a teacher might write four additional examples as follows:

627	319	547	612
−555	−165	−392	−481

Note that all require borrowing in the tens place, utilize all numbers from 1–9 in about the same ratio and do not infringe upon the concepts involved

[1] Bruecker, L. J., and Bond, G. L., *"The Diagnosis and Treatment of Learning Difficulties."* New York, Appleton-Century-Croft, 1955

in the other types. Zeros are not used since they are taken up specifically in groups e to h.

After the test is designed, administered, and the scores recorded in rank order, the teacher is prepared to answer the question "Where shall the line be drawn between proficiency and deficiency?" Although this is a personal matter that the teacher decides on the basis of prevailing standards, there are some guide lines that can be applied.

Obviously pupils with perfect scores will automatically be declared proficient, whereas those with less than 50 per cent correct will be considered deficient. In between these two extremes the teacher might search for a natural break in the sequence of scores and utilize this point as the dividing line.

Under some circumstances the teacher might base her decision on the numbers of pupils she desires in each group. Feeling that she can organize the remedial work best if the proficiency group is made up of about twelve pupils, she could simply make the dividing line between the twelfth and thirteenth scores or as near there as possible.

To identify with some specificity the weakness area, the teacher examines the pattern of errors when correcting the paper. If a pupil has six test errors, five of which occur when the minuend has a zero in the tens place (group f) it would be reasonable to assume that the pupil misunderstands this type. Any student having errors concentrated in one type should be identified as deficient.

It is quite possible that the errors are random and no specific pattern is discernible. In this case the teacher must conclude that the pupil needs to improve generally and would take steps accordingly.

Building Up the Weakness Area

What to do with the proficiency group? The success of a maintenance of skills program relates directly to how effectively an activity can be planned for those who have no need for remediation. Requiring extra drill work of those who don't need it promotes frustration and dissatisfaction among those pupils who are most apt to be group leaders. Most remedial attempts fail because of a reluctance to excuse better pupils from the type of routine work which dulls their interest in the subject.

Excusing them from the remedial work necessitates the planning of a substitute activity or optional unit appropriate for their abilities and interests. The optional unit must be self-motivating, interesting and challenging since this is one of the few occasions when the teacher gives primary attention to the remedial group. The unit can be inspired by current events, such as missiles or satellite launchings, the world series, or the Mobil Economy Run. Other possibilities include topics of local, geographic interest such as The Harbor, The World's Longest River, The World's

Tallest Building, Our Oldest Living Things, etc. The development of optional units should excite the teacher's creativity to a peak performance. Remember that it should be a worthwhile experience for the group while demanding little of the teacher's time.

What to do with the deficiency group? The procedure for the deficiency group follows logically from the results of the test. Pupils showing weaknesses in specific types of subtraction should have practice in this type. The teacher would have prepared mimeographed sheets of practice material for each type. Some time would be taken at the outset to re-explain the meanings involved in subtraction using manipulative materials when appropriate. After the explanation the teacher's work would be almost entirely individual. The practice material would be exactly that and thus the answer would be available so that pupils could check their own work. Emphasis would be placed on accuracy first, letting speed develop naturally.

Pupils whose errors did not fall in specific sections and thereby are considered to have general deficiency should have practice in all types and in about the same amount. The teacher will spend the most of his time with this latter group attempting to isolate misunderstandings which he will correct and then use his expertness to inspire pupils toward greater accuracy.

Culminating the maintenance unit. Remember that the maintenance unit is a two- or three-day activity. The experience is well organized, purposeful, and intense. After some experience the teacher will be able to plan the activities so that all groups involved, including the proficiency group, culminate their activities at about the same time. The answers for the drill sheets should be made available to the remedial group so that they can check their work as they go along. Thus when the papers are collected the teacher need only check them casually to determine how much work was done and that, in general, the form is correct. The proficiency group papers can be collected and checked in the teacher's usual manner. It might be interesting to conclude the maintenance unit by allowing students from the proficiency group to share conclusions, discoveries, or items of interest garnered from their study of the optional unit.

In summary, the point that most needs emphasis is that developing and maintaining skill in a fundamental process is a responsibility to be shared by the teachers of arithmetic at all levels. A high level of competence does not occur automatically, nor as a result of careful initial instruction. Rather, facility is maintained through careful practice. Provision for this practice must be built into the arithmetic program at all levels. The design and carrying out of a maintenance program is a project which brings into play professional skill and creative ability of a high order, and produces highly satisfying and visible results.

THE LEGALITY OF CONTROLS PLACED ON CLOTHING WORN BY PUPILS

BY ROBERT N. ROWE*

Max Rafferty, a California school superintendent, wrote a scathing article for the *Phi Delta Kappan* November 1958, which denounces what he calls the "Cult of the Slob." Mr. Rafferty advocates an unremitting crusade to combat the attitude, dress, and influence of the juvenile "slobs" who have been allowed to drift through our schools. He comments on the duck-tail hair style and slouching posture (with clothes to match) as symbols of educationally perverse, misguided youth. He advocates an organized attack which could begin with eliminating the obvious indications of the "slob." He classifies clothing as an obvious indication.

Another article which is related to "The Cult of the Slob" appears in the November 1957, issue of *School Executive* and is entitled "Can We Outlaw Fad Clothing?" In this article Harvey Handel, principal of a New York junior high school, observes that a growing attitude of disrespect and rebellion toward education is being fostered by black leather jackets, dungarees, duck-tail haircuts and engineers' boots. His observation led him to seek and obtain the support of parents; then he formed and enacted rules governing the wearing of clothes in his school. Handel found an affirmative answer to his question, "Can We Outlaw Fad Clothing?" Other schools throughout the nation undoubtedly have had similar experiences and are enforcing dress regulations.

Despite a common acceptance and an apparently growing desire for controls over school clothes, school authorities must consider such controls from the legal angle. The question could be stated "May We Outlaw Fad Clothing?"

An attempt will be made in the following material to investigate the legality of clothing control in public schools. An emphasis will be placed on such controls in the State of California.

In searching the *Education Code* of California for passages that pertain

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to clothing controls in the public schools, the present writer found little that would imply specific authority. Section 16075 states in part that, "The governing board of any school district may make and enforce all rules and regulations needful for the government and discipline of the schools under its charge." (A similar statement appears in the codes of other states such as Georgia, Arkansas, Oklahoma, and Colorado.)

The *Administrative Code* of the State of California contains the following section, number 64, in Chapter I, Subchapter I, Article 7 of Title 5: "Pupils To Be Neat and Clean on Entering School. All pupils who go to school without proper attention having been given to personal cleanliness, or neatness of dress, may be sent home to be properly prepared for school or shall be required to prepare themselves for school before entering. Every school building shall be provided with sanitary equipment for personal cleanliness."

The two sections mentioned above are the only sections in the codes which appear applicable to the problem of clothing. Therefore it is from these sections that authority for control would have to be drawn. In the event that the authority was ever challenged in California, the court to which the case was referred would investigate precedents established in other courts. In searching through the citation references, the present writer referred to such terms as "school dress," "clothing," "uniforms," "rules," "regulations," "pupils," "haircuts," "cosmetics," etc.

Although no California case could be found involving the clothing problem, the writer found six out-of-state citations. These cases will be presented below and the direction which results from the cases will be summarized.

Matheson v. Brady, 43 SE 2d 703, 1947

Petition for writ of mandamus was brought against a principal of a Georgia high school to compel him to permit the plaintiff's daughter to attend classes while dressed in slacks. The writ was first brought before the Superior Court and was denied on the technical grounds that it did not show the principal to be a public official. Consequently the court could not assume what is known as judicial cognizance that the principal was a public official or that the school was part of the state school system.

The Superior Court judgment was unanimously affirmed one month later by the State Supreme Court.

Although the problem of clothing in the Matheson V. Brady case was never actually tried by a court, it is significant to note that the challenge of the plaintiff seemed to die a "natural death."

People ex rel. Lamme v. Buckland, et al, 269 P 15, 1928

Petition for writ of mandamus against a trustee and principal was

brought before the Supreme Court of Colorado by the father of a girl who had been denied entrance to school because of her failure to wear a uniform.

The writ was denied on the technical grounds that it should have been heard by the school board, county authority, and state school board as implied by the school code. The court contended that the statute describing this course of action provides adequate remedy by appeal.

A dissenting opinion however, pointed out that even if the writ had been brought to the state school board and the board approved the writ, it would have no power to enforce the decision. Therefore the dissenting judge felt the writ should have been heard by the court.

Jones, et al., v. Day, 89 So 906, 1921

Trustees of a public agricultural high school in Mississippi adopted a rule that pupils during the school year must wear a khaki uniform including coat and black tie when in school and when visiting public places within five miles of the school even on Saturdays and Sundays. The rule was to apply to day students as well as to boarders.

The appellant, father of a day student, contended that the rule attempts to govern and manage the pupils at times and places when the authority of the board ends. He asked the court to declare the rule void. The appellant cited a case in Mississippi, Hobbs v. Germany, in which it was decided by the court that a rule adopted by the public school teachers could not require students to remain in their homes and study from 7 to 9 in the evening. In the Hobbs v. Germany case the court stated that it is not the design of the legislature to take control from the parents when the child arrives home.

The Supreme Court upheld the ruling of a lower court in the Jones v. Day case and dismissed the appeal with the explanation that trustees have full power to do all things necessary to the successful operation of the school. Since agricultural schools were given the power to establish dormitories and since boarders were under the custody and care of the school authorities during the entire school year, trustees had a right to require uniforms of day students as well as boarders if they believed the requirement contributed to proper control in school. However, the court interpreted the board's policy to exempt day students from wearing uniforms on holidays to include Saturdays and Sundays.

Pugsley v. Sellmeyer, 250 SW 538, 1922

Trustees of an Arkansas high school adopted a rule forbidding students to wear transparent hosiery, low-necked dresses, or any style of clothing tending toward immodesty in dress, or the use of face powder or cosmetics. An eighteen-year-old student arrived at school with talcum powder on her face and was denied admission by the principal. The student filed a peti-

tion asking the Supreme Court to require the directors and principal of the school to admit her as a pupil, notwithstanding her refusal to obey the rule set out above.

The courts ruled against the petitioner stating that the courts will not interfere with the exercise of discretion by school directors in matters confided by law to their judgment unless there is clear abuse of discretion or violation of the law. The court found no indiscretion, no element of oppression or humiliation and furthermore stated although the appellant had a right to appeal, courts have other and more important functions to perform than that of hearing complaints against board of directors' rules and regulations governing discipline of school children. (It was pointed out by the court that these board members are elected by the people on an annual basis.)

The court made it clear that it was not registering approval or disapproval of the school rule. However, a dissenting opinion stated that the dissenter believed the directors were discreet in rescinding the rule. (The directors had rescinded the rule soon after the original appeal.)

Although the first two cases were dismissed on technical grounds, the courts involved in the Jones v. Day and the People v. Buckland cases made it clear that school boards have the right to make any rules or regulations which the boards feel are necessary for effective management of schools. The only reservation is that the boards use "discretion" and avoid humiliation or oppression of pupils.

There is no record of the people of California challenging the right of the school board to regulate dress in either the *Attorney General's Opinion* or in court citations. This fact coupled with the scarcity of challenges in the higher courts in other states intimate that school boards have a good deal of freedom in imposing clothing regulations.

The *American Law Reports*, Volume XVIII, contains an annotation concerning: "Validity of regulation by school authorities as to clothes of pupils." This annotation was written in 1922 and notes that few cases have considered the reasonableness or validity of regulations regarding the dress of students. The annotation states that the case of Jones v. Day, 18 A.L.R. 645, "is in accord with the general rule that school authorities may make reasonable rules and regulations governing conduct of pupils while under their control." Another case is cited, Connell v. Gray, 33 Okla. 591, which held that the board of regents of a state college has the power to require students to wear a prescribed uniform.

On the other hand the annotation also indicates there may be situations in which a clothing requirement is "unreasonable" as in the case of Valentine v. Independent School District, 187 Iowa 555. In this case a student had been denied the right to graduate despite his full academic and disciplinary qualifications because he refused to wear a cap and gown during

graduation. The Supreme Court of Iowa ruled that the regulation was ultra vires, but conceded that the school authorities had the right to prevent the student from going through graduation ceremonies.

In answer to the leading question asked at the first of the article, the writer believes we may *legally* outlaw fad clothing. Administrators cannot hide behind the rationalization that the law will not support controls on clothing worn at school. The cases cited above indicate that the law will support clothing controls as long as the boards and administrators act in good faith with the intent of improving school management.

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STUDENTS—OR STATISTICS

BY WALLAZZ B. EATON*

The community commitment to provide educational facilities and the opportunity for all youth to achieve an education commensurate with each individual's capacity carries with it the responsibility to offer opportunities for various kinds of individuals, not just those who fit the stereotyped pattern of the "typical" youngster. The great mass of our teen-age population does conform to the "typical" pattern but there are many who have personal or economic problems which preclude their attending a "regular" high school.

Certain young people have extreme emotional problems which often lead to difficulty either with school authorities or law enforcement agencies. Others have a need (real or imagined) to work at gainful employment. Some have physical or health problems which could keep them from achieving an education under normal circumstances. Then there is a group who enter a school district too late in a semester to benefit from attending regular classes. Still others need the opportunity, a second chance, to achieve academic success in an environment which differs significantly from the scene of past failures.

Unless special provisions are made for these youngsters, many of them would become a statistic, a number in the drop-out studies. The step into adulthood would find them lacking the education which society feels is necessary to participate competently in that society. The school district of the city of San Diego provides special facilities for this rank of youngsters through the E. R. Snyder Continuation High School and its two annexes, Taft and Midway.

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The Continuation School was established in order to assist those boys and girls who have not yet reached their eighteenth birthday or graduated from a regular school and have found it necessary to withdraw from full-time high school. Here the opportunity is provided for self-improvement, job-performance improvement, or for taking regular high school credit courses. All instruction is individual. The philosophical cornerstone is personal adjustment, recognizing each individual as an entity with good personal attributes as well as very human frailties.

Snyder's destiny is guided by an administrative staff which has a strong guidance orientation and a teaching force especially selected for a broad subject-matter preparation and the ability to work with all types of youngsters on an individual basis. The relatively small staff works with a total student enrollment of about seven hundred youngsters located at the three centers.

One of the traits vitally necessary for a teacher to be successful at Snyder is planning ability. Lesson organization does not revolve around two or three subjects but, rather, the entire gamut of courses in a given subject field. The business education teacher, for example, must be prepared to teach four levels of typewriting, bookkeeping, record keeping, office practice, machine calculation and machine duplication, business arithmetic, filing, general business, and other related subjects as the occasion arises. It can readily be comprehended why extensive pre-planning is essential in conducting a successful class. It is impossible to, day-by-day, play it by ear. Such an approach would be downright foolhardy. Organizational skill as well as a thorough knowledge of the entire subject field must be among the attributes of the successful teacher.

Class sizes vary according to each subject but the average hovers between twenty and twenty-five students per each teaching hour. This complement permits not only an individualized type of instruction but an opportunity for each teacher to function in the all-important role of classroom counselor, working with youngsters who need counseling help *when* they need it and not at a future time when a "formal" counselor is available. Youngsters seem to feel they can turn to a teacher for advice, knowing they will receive a sympathetic hearing and help in seeing a problem through to the end.

Backing up the classroom teacher-as-counselor is a skilled staff of counselors. These specialists are available to pupils at almost any time they feel the need to seek aid. Each serves less than one hundred students. This permits every pupil to be known by sight and name to the staff. Personal and academic problems are known by the counseling office as well as by various teachers with whom the individual feels a close rapport. The counseling force daily faces the problem of enrolling new students and, in addition to orienting them to a new school situation, must coordinate

the student's past work with courses to be taken at Snyder. This requires considerable patience, talent, and ingenuity since records are not always complete and, often, are not available at the time of enrollment.

For ultimate effectiveness in helping youngsters, a constant cooperative relationship is maintained with other schools and with the guidance personnel of the district. Close liaison with other community agencies interested in assisting teen-agers affords a coordinated effort of striving to help those young people who need aid. An excellent example is the visits made by the State Department of Employment when graduating seniors and terminal students are tested and counseled regarding their vocational aptitudes. The feeling is that these individuals are better prepared to do the job than the school, considering the specialized nature of employment counseling.

The curriculum closely parallels the offerings of the other secondary schools in the city. All of the courses required by State laws and the requirements of the local board of education are a part of the program of studies for grades nine through twelve. Additionally, a varied program of electives permits a pupil to obtain a well-rounded education as dictated by his own educational goals.

Many youngsters fail to adjust to the academic world of the secondary school for the obvious reason that they failed to master the necessary skills of reading, writing, and arithmetic in earlier years. To ignore these insufficiencies is to compound them. In harmony with the philosophy of working with individuals at the level of their abilities, programs are offered in remedial reading and review arithmetic for those whose diagnostic test scores indicate weaknesses and whom the counselors and teachers feel will benefit from special work. High school credit can be earned for review arithmetic in the senior year but, consistent with the policy of the district, required graduation credit is not allowed above the tenth grade for participation in the remedial reading program.

Due to the individualized nature of the learning program, teachers have developed various methods of organizing experiences other than the individualized daily lesson plans. Projects are used in some subjects, contracts in others. In many cases each student is provided a "special" assignment designed to coincide with his abilities and educational needs. Frequently a youngster is asked to help in organizing his own lessons, thereby providing for a feeling of participation.

Learning aids are many and varied. Textbooks are basic adoptions except in cases of extremely poor readers. In certain subject areas judicious use is made of work books when it is felt they are useful in enhancing learning. Audio-visual aids have been adapted to individual use. Film strips are utilized by providing desk-top viewers rather than a large projector and screen. Pupils can use this learning device individually when

it best fits their learning program. The record player has been individualized by substituting earphones for the loud speaker. Sixteen-millimeter projectors are found in use by individuals or small groups using headsets in place of the speaker. Tachistoscopic instruction is found in the remedial reading classes to enhance learning in this phase of the program. All these learning devices provide each individual a wide variety of experiences on a personalized basis. Nothing, however, substitutes for the close teacher-student relationship found in the Snyder classrooms. Supporting the program of learning is a broad testing program covering many phases.

Should an intelligence-test score be missing from the student's records, the Henman-Nelson or Wechsler test is administered at the school. Diagnostic tests are given in English usage and reading. The Kuder Vocational Preference Record is given to eleventh- and twelfth-graders and terminal students. This phase of the testing program is followed up by the vocational aptitude test administered both by the city schools and by the State Department of Employment. Thus, the student knows not only the type of work he will like but what he is best prepared to do in terms of his personal qualifications. When needed, the services of the school district psychometrist are available for administering tests aimed at developing further information which might be helpful. All of these services are provided to aid the staff in working with and helping youngsters as well as giving the student information which will be useful to him in planning his future.

Individual class schedules are as varied as the student population. Working students attend classes but four hours a week under the continuation education law. Other students may attend from twenty to thirty-eight hours a week depending on the dictates of the individual's educational goals. The long school week is made possible by offering classes from eight in the morning to five in the evening. It is a constant source of amazement that so many youngsters elect to enroll for eight hours a day, thirty-eight hours a week. These are the teen-agers who feel a need and want to make up work lost either through failure or prolonged absence from school.

Report cards, as commonly thought of, do not exist at Snyder. Achievement marks for the equivalent of a semester's work are symbolized by credit slips for each individual course. Thus, a student is not bound to complete U.S. History in a given number of hours or fail. More time is available if needed for a particular individual successfully to complete the work. On the other hand, if an unusually bright student completes the course work sooner than usual, he is granted credit and can proceed with the next phase of his learning. The slower learner is permitted more time and the better student is not lock-stepped through each course.

A striking feature of the school is the relaxed atmosphere which permeates all activities. This, however, is not to be confused with any situation resembling laissez faire. The youngsters know what is expected of

them and generally the rules, although few in number, are adhered to. Disciplining, when necessary, is on a counseling and not on a puntive basis. Extreme measures are taken only rarely. Each teacher handles most of the classroom cases individually rather than sending youngsters to the office to see an administrator. The smallness of the school, the attitude of the administrators and counselors, and the close teacher-student relationship all contribute to the reduced tension found within the school.

What are the special features of Snyder, lacking in other schools, which make youngsters feel at home? One factor is the decreased emphasis on club, athletic, and social functions. These youngsters cannot feel left out of club and clique groups in the school situation because few of these activities exist. Socially, all are equal if measured by school activities of a formal nature. The make-up of the student body and a fluctuating enrollment precludes formalized activities since the youngsters are not too adept at interpersonal relations. Psychologically, the climate of the school is one of success. Every student-teacher contact is one of helpfulness, of aiding youngsters to achieve educational goals within their capabilities, and not of ranking or rating. There is no obvious competition for grades between students—no report cards to compare. No grades are posted—no failure publicized. Each youngster has a chance to succeed at his task.

The work performed by the personnel of the Snyder school is complicated by such factors as mobile population, mushrooming growth of the community, and in general the complexities of living in a large metropolitan community. No pretense is made that the *best* possible job is being performed but constant evaluation and re-evaluation of the objectives and the means of attaining them leads to a fuller program of learning for each youngster.

I have attempted to present a faithful description of what Snyder Continuation School really is and what goals are being attempted. However, something is missing! The school is the students and the teachers. Success or failure cannot be measured in terms of mechanistic functions but, rather must be assessed through the accomplishments of its students and their attitudes toward the school.

In an attempt to tap this student feeling, brief statements were solicited from any youngster who wished to comment on the school. The writing solicited was to be brief, honest, and *unsigned.*

The following selected student statements represent the tenor of the comments:

1. "I like this school better than (other) public schools because one can go at his own speed and get more individual help."
2. "I never did like school and I probably never will. However, I do like this school better than other schools I've attended."

3. "Also, the faculty has been very easy for me to get along with."
4. "I like this school better than any other school I have ever attended because, here, I feel as though I were an adult and also I'm being treated as an adult, too. I like all the teachers here at Midway and have respect for them. They make me feel that if I ever had a problem and needed help I could always go to one of them. They are also there to help me with my school work, too."
5. "I do like this school better than any that I have ever attended before because the teachers here are more like human beings. I can go to school more hours if I like, or I can attend less hours and work on a part-time job."
6. "I enjoy school now because I enjoy my teachers. To me they are more than teachers, they are my best friends. Before, at other schools I hated my school work as well as my teachers."
7. "I like this school. It has given me a better chance to do my best work. Here if an individual needs help he can get help. I think there should be more schools of this sort. All the other schools I've been to couldn't begin to compare with this one. I have really enjoyed myself here. I have made many friends and everyone is nice to everyone. I have enjoyed myself at school for the first time since the first grade."
8. "I like this school a lot better than any other school I have attended because we are treated like adults and not like teen-agers."

One attempts to do certain things—create a climate, develop rapport with youngsters, provide a good learning situation. You hope the students understand. The positive comments have been presented which, as was to be expected, far outnumbered the negative responses. Generally the adverse comments bemoaned the lack of physical education facilities at the annexes, lack of social activities, and the necessity of taking certain disliked classes.

This, then, is the story of a school. Why was it written? What would prompt a teacher to tell the tale of his work-a-day world? First, I believe in the work being done at Snyder and in the rather unusual way it is being accomplished. I believe in the individual and his right to achieve whatever measure of success is possible through his own efforts—not by being lock-stepped from one subject to the other without achieving passable mastery of the subject matter. I believe that many able youngsters become drop-out statistics because they do not, or cannot, conform to the standards set in many high schools—that another environment will allow them to achieve success in their high school education. And, perhaps in the long run, this all-too-inadequate description will serve to aid others who want to help youngsters who need help.

WHAT'S HAPPENING IN CALIFORNIA SECONDARY SCHOOLS

BY WILLIAM N. McGOWAN*

What's Happening in Junior High Schools

More than fifty teachers of social studies in *San Francisco* junior high schools are meeting on alternate week ends to consider the sequence and content of social studies in grades seven, eight and nine. The content they have been working with, including their review of the sixth grade, is as follows:

Grade Six: Life in the World Today; Introduction to Global Geography and Study of Latin America

Grade Seven: Life in the World Today; Europe, The Mediterranean Area, Middle East, and the United States

Grade Eight: The United States and Our American Heritage

Grades Nine and Ten: Conflicting Forces in the World: Asia, Africa, and the U.S.S.R.

In order not to interfere with the placement of U.S. History in the eighth grade, grades six, seven and nine have been thought of as a unit with definite responsibility assigned in those three grades for complete geographic coverage of the world.

What's Happening in Four-Year and Senior High Schools

The *Las Lomas High School,* Walnut Creek, Parents' Club publishes a monthly Bulletin, "El Boletin, Las Lomas Amigos." The October issue reported meeting notices, information about construction at the school, CASSA Accreditation, National Merit Scholarships, school dance regula-

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tions, club committee work, and the Club Budget. The Club operates on a budget of some $2,000 and has a very active part in the life of the school.

San Diego senior high schools have a scholastic eligibility policy, originally enacted in 1958 on an experimental basis, that provides: ". . . senior high school students who participate in certain extracurricular activities must have earned a grade average of 'C' with no recorded failures during the prior semester."

The Los Angeles Board of Education has adopted and distributed a pamphlet titled the "3R's of Discipline." The pamphlet, very attractively done, was distributed to all parents. It contains three sections: Responsibility of Pupils, Responsibility of Parents, and Responsibility of Teachers. A very comprehensive report of Board rules and other regulations affecting discipline has been published in a little book titled "Discipline in the Los Angeles City Schools."

A plan for the administration and operation of a work-experience education program has been approved by the Bureau of Secondary Education, California State Department of Education, for the four high schools in the *Mt. Diablo Unified School District—Mt. Diablo, Pleasant Hill, Pacifica, and Clayton Valley.*

The plan provides for both an on- and off-campus work-experience education program, modeled after programs in operation in the district since 1952. The plan provides for three classifications of work experience: exploratory, where the general purpose is the vocational guidance of the pupil; general, where the general purpose is supervised part-time employment with the intent of assisting pupils to acquire desirable work habits; and vocational, where the general purpose is the extension of vocational learning opportunities for the pupil through part-time employment in the occupation for which his course in school is preparing him.

The *Burbank Unified School District* published in October a "Bill of Rights" statement referring to the eleventh-grade student. A brochure-type publication, it states that "the eleventh grader seeks to understand America's Development, appreciate American ideals, inquire into his world, stimulate artistic imagination, develop useful skills, grow in sportsmanship." Each statement has a paragraph on development, and illustrations.

O. I. Schmaelzle, principal at *George Washington High School, San Francisco,* and past president of the California Association of Secondary School Administrators, uses a system of faculty bulletins to carry significant information to his staff. In his #3 bulletin for the current year, Mr. Schmaelzle reported data concerning grade-point averages of George Washington graduates attending colleges and universities. The raw data held much of interest for the teaching staff and led to these closing comments by Mr. Schmaelzle:

"Judging by these statistics, it could be stated that the George Washington High School graduates easily rank above the average with other students in their respective colleges. This is a credit to the splendid and conscientious teaching staff in this school. Our record shows we need not apologize for our standard of work, as this record clearly justifies our methods of teaching, our strict standards of grading, and our forceful discipline. Our efforts to develop creative thinking, student responsibility, and student self-reliance are rewarded by the excellent records our students have made after graduation from George Washington High School."

Los Angeles City Schools have planned extensive institute programs in the science areas for the 1959–60 school year. Teacher institute session topics indicate the scope of the program:

Freeway Planning—Medium Barriers
The Safety Handbook
Soviet Science Education
Recent Developments in Cell Physiology
Teaching Techniques for Biological Science Teachers
The Viruses and Chromosomes—Chemically Related—Physiologically Opposed
Biological Aspects of Antibiotic Actions
Teaching Techniques for General Science Teachers
Photosynthesis
Recent Developments in the Sciences
Trends in High School Physics
The Cell, A Chinese Box Puzzle
Destructive Plant Pests and their Demonstrated Control
Chemistry Demonstrations from the New Course of Study
Engineering Application of Chemistry to Industry
Use of Radio Isotopes in Biological Research
Current Research in Cancer Quackery in Cancer Treatment

SYMPOSIUM

THE PLACE OF TESTING AND EVALUATION IN LEARNING

RICHARD HARSH, CO-ORDINATOR OF SYMPOSIUM

Introduction by Richard Harsh*

Intense social and educational interest is being expressed for the maximum use of human resources. Accelerated programs, special groupings, automated teaching, and curricular readjustments are being viewed and experimented with in this regard. Efforts to bring about greater learning and development of human resource need to be based upon an accurate picture of human potentiality and attainment.

The history of evaluation is long. The Greek civilization showed concern and made reference to the range of human ability. Through the ages we have experienced periods of excessive use of testing and evaluation as well as periods of relative disuse. Modern education has experienced a substantial increase in the use of testing and evaluation instruments. Some view this increase with alarm while others respond with enthusiasm. Some who use various evaluative techniques question the meanings of the results.

Debate on the values of testing programs frequently rest on emotionalized hypotheses rather than facts. In this issue of the *Journal* several articles present a variety of approaches to current problems in testing and evaluation. These articles present divergent points of view. They cover such varied topics as automated teaching, state and national testing programs, and the quest for new measuring devices. *The intent of this issue of the* Journal *is to promote more thoughtful consideration for the realistic place of testing and evaluation in education, rather than offering a blueprint of a desirable program.*

Testing and evaluation are an important and integral part of any sound educational program. The effectiveness of an evaluation program depends upon the appropriate and intelligent use of testing and evaluation instruments within the framework of the local program.

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TESTING PROGRAMS: THEIR FUNCTION IN EDUCATION

BY JOHN C. FLANAGAN*

Some of the contributions of testing programs in developing and achievinging procedures of increased effectiveness are well known to educators. For example, tests are of great importance in helping to identify the students who should be encouraged to prepare themselves for various careers. It has long been known that there are substantial individual differences which persist in spite of the best methods which teachers, parents, and others can employ to remove limitations and weaknesses. Most recently it has become equally clear that these differences relate not only to level of aptitude, but also to the pattern of the individual's specific aptitudes. Experience has shown teachers that the best student in mathematics is frequently not the best student in foreign languages. During World War II is was convincingly demonstrated that the aviation cadet who had the aptitudes for becoming the best pilot was frequently not the same type of person as the cadet who would be the best navigator.

In World War I psychological research and the development of the Army Alpha demonstrated the practical importance of differences in general levels of intelligence. Research during World War II resulted in important advances in identifying specific patterns of aptitudes having practical implications. Building on these findings, psychologists have now identified and defined twenty to twenty-five types of aptitude tests each of which has suffficient uniqueness in the functions measured to warrant identifying and reporting as a separate score. However, at present, only preliminary exploration has been made of the psychological significance and

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predictive value of most of these scores. If correct and helpful interpretations are to be made of a student's pattern of aptitude and achievement scores, adequate follow-up data regarding the student and his activities must be obtained.

The existence in each individual of a unique pattern of aptitudes has been established, but the facts are not yet available to use these unique aptitude patterns in guiding the student to make maximum use of them. In one preliminary follow-up study, conducted five years after graduation on a sample of 1,200 high school seniors tested in 1953, only four were found to be working as chemists. Not a one of this sample of 1,200 had entered the fields of either mathematics or physics.

The results from this small study made it quite clear that if a significant number of mathematicians, physicists, chemists, lawyers, physicians, and other specialists were to be included in a follow-up study, a large-scale testing program involving hundreds of thousands of students would be necessary.

If we are to plan properly for meeting the increased needs for advanced education—if we are to know how many educators, laboratory technicians, psychologists, or mathematicians we are going to train and educate—we must have more information on how many students possess the aptitudes, inclination, and educational background for various types of careers. Each person has his own special talents, but many persons fail to receive the encouragement and education necessary to assist them in qualifying for the type of work where they may use these talents to best advantage.

There are many tests in existence today, and for some time programs have been under way for testing one person or great numbers of persons to determine general intelligence, aptitude for art or music, capability in languages, manual dexterity, and many other factors. For the first time, however, a scientifically planned national inventory of human talents is being conducted: a survey of the aptitudes and abilities of a nation's people.

This program which involves "The Identification, Development, and Utilization of Human Talents" is popularly known as Project TALENT. After two years of planning and developmental work by a staff headed by Dr. John T. Dailey, the University of Pittsburgh, supported by funds from the United States Office of Education, is conducting this long-range study. The staff has been assisted by four advisory panels which include many of the nation's leading specialists in problems of manpower, testing, guidance, and educational research. This national inventory of the aptitudes and abilities of a scientifically selected sample of 500,000 high school students is to be conducted by administering a two-day series of aptitude, achievement, interest, and biographical background information tests in March 1960.

It is anticipated that through this aptitude census detailed information will be provided regarding the patterns of aptitudes now present among the nation's high school students. At the time of testing, detailed information will be collected regarding each student's background, interests, hobbies, educational experiences, and plans. Thus, in addition to scores on forty aptitude and achievement tests, several hundred other items of information will be available to provide clearer understanding of the student's subsequent activities. It is proposed that these 500,000 students be followed up one year after graduation from high school, and also five, ten, and twenty years later.

In a relatively short period of a year, information will be available regarding the success of students having various specific aptitude patterns in completing the first year's work in a wide variety of college courses and occupations. Later follow-ups of these students should make it possible to refine these findings on the basis of their subsequent success in performance in various careers.

There has long been a need for a study of this type for meaningful planning in education. This scientifically selected cross section of high school students in this country is sufficiently large that the findings should provide people in the field of education with many important facts about the total student population.

Several fairly recent developments make a study of this kind appropriate at this time. Much work has been accomplished in the development of fundamental tests of aptitudes and abilities. These should provide useful information for measuring and determining the extent of learning and the relative potential of the students tested.

Great strides have been made in data processing through the development of new high-speed electronic scoring computers and scoring machines which process several million bits of information in a relatively short time. It is anticipated that the one billion bits of information from the 500,000 sets of student's answer sheets in the Project TALENT testing will require approximately 1,250 machine-hours for initial scoring, reporting to schools on the students' scores, and recording the information on magnetic tape for follow-up purposes. Analyses of these data will take less than 100 hours. The processing of data from a testing program of this size would have required millions of man-hours before these electronic devices were perfected.

One of the most important factors involved in the initiation of this study is the fact that we have begun to realize and appreciate the need and importance of improving our educational system to assure students who have diverse patterns of aptitudes and developmental problems of proper training and preparation for their life work.

Recognizing the timeliness and the great need for research in this

field and the value of an inventory of our human talents, leading educational research institutions, agencies of the federal government, and representatives of professional, educational, and scientific associations have joined in supporting, assisting, and guiding the work of Project Talent.

Examples of other current activities in the use of tests and testing programs to increase student learning are provided by two research projects now being carried out jointly by the American Institute for Research, the Pittsburgh Educational Television Stations, WQED and WQEX, and the high schools and teachers in the Pittsburgh area. These studies are being supported through the United States Office of Education's National Defense Education Act Title VII funds.

One study being conducted by Dr. Arthur A. Lumsdaine and Dr. David J. Klaus utilizes the high school course in physics developed by Dr. Harvey E. White. The purpose of this study is to demonstrate the feasibility of combining the supplementation from TV presentations with integrated self-instructional quiz materials presented to individual students on "practice or teaching machines."

The second project being conducted by Dr. Lumsdaine and Dr. George L. Gropper involves the experimental comparison of the effectiveness of alternative methods of presenting specific scientific course materials in educational television lessons. The experimental procedures are designed to stimulate the extent of pupil participation. It is hypothesized that more active participation and more efficient learning can be achieved by the use of techniques designed to encourage students to anticipate the materials to be presented. By fostering active anticipation or pre-rehearsal of the material and by providing immediate feedback to the students as to the correctness of the responses, it should be possible to greatly improve the acquisition and retention of knowledge. It is also anticipated that this method of presentation should foster a more active interest in the subjects being presented.

Many other experiments and experimental programs are now being developed in various parts of the country. But unless improved tests are designed to measure and evaluate the effectiveness of some of these new methods of presentation and organization of content we will be unable to make best use of them.

Through experimental studies such as these, and through large-scale testing and follow-up studies such as Project Talent, it will be possible to increase knowledge in the fields of teaching and guidance. Some of the specific objectives of Project Talent, for example, include:

1. The development of a set of standards for educational and psychological measurement which will provide more accurate benchmarks or standards for test authors in standardizing tests so that scores will indicate comparable levels of ability.

2. The devolpment of a comprehensive counseling guide to assist counselors and teachers in recognizing patterns of aptitude and ability which can be used to predict success in various types of careers.
3. The promotion of a better understanding of how young people choose their life work.
4. Better understanding of the educational experiences which help to prepare students for their life work.

Information gained through programs of the type described should provide the vital information needed as a basic resource for educational planning, for assistance in establishing manpower policies, and for the effective guidance of our children to assist them in making the best choice of a career and in helping them to make the most of their potential.

TEACHING MODERN FOREIGN LANGUAGES

The teaching of modern foreign languages is surely in a ferment. Our national need to speak the language of our most populous and important world neighbors will eventually have to be satisfied. To accomplish this, we need a change in emphasis from learning *about* language toward learning the *spoken* language itself.

Of Course, It Is Not Easy

to make the change toward functional teaching of MFL. That is where we need help. And here are the most recent helpful references:

Eddy, Frederick D. and Hocking, Elton, editors. "What Do We Know About Teaching Modern Foreign Languages?" September 1959 issue of *Audiovisual Instruction*, Dept. of Audio-Visual Instruction, NEA, 1201 Sixteenth St., NW, Wash. 6, D.C. Price 50¢ with quantity discount. A basic primer of forty-five questions and answers on language laboratory equipment and procedure.

Hocking, Elton and Merchant, Robert C. "The Fabulous Language Labs" Reprint from April 1959 *Ed Screen and AV Guide*. Single copy available from Elton Hocking, Modern Language Dept., Purdue University, Bloomington, Ind. Diagrams and suggests language laboratory installations.

O'Connor, Patricia. *Modern Foreign Languages in the Secondary School: Prereading Instruction*. U.S. Office of Education, Circular No. 583, June 1959. 45 p. Single copy free from U.S. Office of Education, Wash. 25, D.C. Suggestions for initiating aural-oral instruction in class, for assigning homework, and for measuring achievement. Written as a service of the Foreign Language Section under Title III of the National Defense Education Act of 1958.

Sanchez, Jose. "Twenty Years of Modern Language Laboratories—an annotated bibliography." *Modern Language Journal*, May 1959.

—NASSP Spotlight, Sept.-Oct., 1959

THE MERIT TEST

BY JOHN M. STALNAKER*

The National Merit Scholarship Program includes as an integral part of its activities a test of educational development—a test of those developed abilities which are essential to academic work. This past year this test was taken at the end of the eleventh grade by some 550,000 pupils in 14,500 secondary schools.

The Merit organization, a not-for-profit corporation, while sponsoring this test, does not publish, sell or distribute tests, or derive any money from test sales. The testing is handled by a testing agency under contract. NMSC is free to select the agency it believes best able to serve its exact needs under satisfactory financial arrangements. At present, Science Research Associates of Chicago handles the preliminary screening test and the College Entrance Examination Board conducts the Scholastic Aptitude Test which is used as the confirming test for the semifinalists in the program.

Testing for a scholarship program should be considered in the light of the purposes of the program. In a large national program like that of NMSC, the purposes are complex. The obvious and direct purpose is to see, to the extent of our ability, that no student of exceptional academic ability is prevented for financial reasons from attending college. To accomplish this purpose, a search is made for able students in the schools throughout the country. A screening test is the most efficient means of isolating a group containing this talent. Accordingly, a top group based exclusively on this test result is selected in each state. Because the state is the educational unit and because states differ in their educational facilities and

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methods, NMSC selects the semifinalists separately for each state. The semifinalist group constitutes about 0.8 of one per cent of high school graduates of a state. The assumption is made that this small a cut at the top of each state will result in a group of highly superior quality and that each state will have its proper share or quota and in actual practice the state quota system has worked quite satisfactorily. The total semifinalist group numbers approximately 10,000 with the more populous states having more and the less populous states having fewer. California, for example, will have over 750 semifinalists while Nevada will have under 15.

In addition to the semifinalists, who constitute less than one per cent of the seniors, a second group is selected on a *national* basis (those having a selection score of 134 or higher) and sent letters of commendation encouraging them to continue with their education. This year, approximately 27,000 letters of commendation will be sent to the schools for distribution to students scoring in the top group nationally who did not receive the semifinalist status. The number in each state will vary according to the proportion scoring high on the test nationally and without regard to state quotas. In California, for example, there were 2,200 such letters sent while in several other states the numbers were under 15.

By using the dual system of state quotas and a national qualifying score, the program recognizes the best in each state and the best in the nation on the test. The total number given individual recognition by being named a semifinalist or being sent a letter of commendation is less than three per cent of the high school seniors.

When a test is taken by over half a million students, we must be concerned about its influence and what might be called the impact of the program sponsoring it. Perhaps the major impact to date of the National Merit Scholarship Program has been to help create a climate of opinion in which the work of the schools in training the mind of the pupils is recognized and encouraged. The Merit Program calls public attention to the superior work of the schools in developing in its pupils the skills and abilities essential to advanced academic work. Here, for once, the attention of the public is directed not to the athletic or social activities, not to misbehavior or to the inevitable teen-age problems, but to the chief work of the schools, namely, developing disciplined minds prepared to advance in academic work.

The most suitable test for the purpose of the Merit Program should be one having long-range desirable influences on those who take it and having no detrimental influence on the schools, but, on the contrary, supporting the work of the schools. In any broad scholarship program the winners are always few relative to the number considered for the awards. The programs attracting wide-scale participation are justified only if the influences on those not selected and on the schools participating are largely beneficial ones.

To accomplish these desired ends, the National Merit Scholarship selection test is one measuring in a relatively direct fashion the complex skills required for successful work in virtually any program in a college and taught in all secondary schools. It is a college readiness test. At the same time, the test content should not exercise a restrictive influence on the curriculum and the test scores should not be influenced by short-term cramming.

The test should measure the development of fundamental skills in reading with understanding, basic ability to handle elementary quantitative work, and knowledge of English. Proficiency in such areas is not the result of any single course of study. The test should place no limit on what is taught or how it is taught.

The test should appear fair to the student who takes it. In so far as it requires the very type of exercise that the college will require, the student will recognize its cogency. The student should recognize that the test goes beyond measuring inherited capacity and rewards those who have applied their abilities and learned and developed as a result of school work.

These specifications are rigorous ones. The Merit test attempts to fulfill them. The extent to which it succeeds cannot be quickly established but studies are under way, and in the development of each new form of the test—and new forms are prepared annually—as many safeguards as possible are built in.

The reporting of the test results in meaningful terms is no easy one. Norms based upon a representative national sample have many advantages for they allow a student to know where he stands in comparison with all other students at his grade level. It is valuable, in addition, to have norms which permit a student to make comparisons with some sub-group with which he is identified. The Merit test results are reported in terms of converted scores which by themselves are relatively meaningless. A percentile score is reported showing how the converted score stands in comparison with all students at the grade level. In addition, a table is presented which will permit the student to compare his score with that of the 550,000 other students who took the test. This is a select population: largely college oriented. Then finally a table is presented to the schools in each state giving the distribution of the scores obtained by the students who took the test in that state. It is desirable to give additional statistical information so that students can compare themselves with other students attending certain types of colleges and plans are under way to prepare such information. A manual for interpreting the scores is sent each school along with a technical report.

The test is a long one requiring three hours of concentrated work. The test booklet itself is forty-four pages in length. The mere taking of a test of this type gives the pupil concentrated experience with tough complex in-

tellectual tasks which should benefit him. The scores, reported to the schools and through them to the students, properly interpreted in the light of other evidence, can be of value in guidance work. Interpretive material is sent for use by the pupils. No one should lose by taking part in the Merit Program. There should be some value for everyone.

While tests unquestionably serve a significant role in the identification of a pool of potential talent, there are limitations to the tests. Because obviously the test measures only a small part of the work of the school, test results are not a fair means of assessing the total effectiveness of any school. The use of the results of the Merit Program to compare schools is, therefore, not justified. The test will, to the extent it is successful, measure in certain intellectual areas the readiness of a pupil for college. It will not measure all of the components of talent, all of the characteristics necessary for scholarly and scientific attainments. The contributions to knowledge and to the development of ideas are made by people who have more than aptitude, for aptitude alone is not enough. The ability to deliver results, to achieve, in a competitive world requires motivation, drive, ambition, purpose, and related qualities.

If an objective of the Merit Program is to select students who will be creative and productive, who are not merely promising but who will succeed in accomplishing scholarly and scientific work, it is necessary to consider more than test scores. Because at this time we do not have appropriate measures for motivation and perseverance which can be used in pressure-testing situations, we must make estimates from background information supplied by the pupil and his school. A selection committee meets and assesses to the best of its ability these other important characteristics.

To date some 3,000 winners of Merit Scholarships have been selected and are in college—in 389 colleges and universities. Almost all of them are succeeding. Most of them are doing honors work in our highest standard colleges.

The identification of talent is important to us as a nation. Early identification is desirable as it permits more attention to the nurturing of talent. Any program which calls attention to talent and encourages pupils and their parents to honor trained intelligence deserves our collective support.

The Merit Program calls attention to talent and in doing so focuses attention of the public on the work of the schools in developing their talent. It also puts the spotlight on existing talent and opens opportunities to many students. Most of the 10,000 finalists in the Merit Program receive some type of scholarship help.

CAN TESTS TEACH?

BY SCARVIA B.. ANDERSON*

Fortunately, the number of students who view tests as teachers' traps and the number of teachers who view tests as administrators' clubs have been declining rapidly. Too many students and teachers have come to recognize the values of test results for self-appraisal, guidance, and placement to keep the old scare technique operating. But to say that teachers don't sometimes begrudge the time taken for testing and that most students face "test day" with real enthusiasm is going too far in the other direction. Yet this is just what we may be able to say soon if tests can be utilized to support the process students and teachers are most concerned about—if tests can be used to *teach* students something. Furthermore, it may be the case that eventually tests will be as useful for teaching as for measuring.

Let us go back and look at the learning process. Then we can see how tests might contribute to it.

There are two fundamental conditions for learning:

1. The organism makes a response.
2. That response is reinforced.

The infant cries; the mother picks him up. The pigeon pecks at a spot on the wall; the experimenter provides a food pellet. The student says, "S-E-P-A-R-A-T-E, separate"; the teacher says, "Right."

In each of these situations, what is a response is easy—crying, pecking, spelling a word. In fact almost any activity can be considered a response.

What is reinforcement is a little harder—warm physical contact, food, information. To qualify as "reinforcement," the consequences of the response must be relevant in kind and amount to the needs of the organism at the time of the response.

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Even without any concerted effort of parents, psychologists, or educators, children will learn through the accidental or incidental occurrence of the response-reinforcement pair of conditions. But parents, psychologists, and educators are concerned with what children learn and when they learn it. They are not content to wait around hoping the child will by chance take his fork in the right hand, call a red balloon "red," produce the $2 \times 3 = 6$ combination, or play a true scale on his trumpet just at the moment when satisfactory reinforcement is forthcoming.

Mostly they have concentrated on creating an environment which will stimulate the desired responses: the textbook, the lecture, the blackboard demonstration, the "flash card," the recording, the film, and—most recently—the television program.

Reinforcement, the second condition for learning, has come in for little specific attention. True, the teacher says "right" occasionally in class, marks and comments are written on test papers and homework, and faith in the "natural" reinforcing powers of some subjects (e.g., the satisfaction deriving from solution of a particularly troublesome math problem) is not without some justification. But how efficient is it for such a large proportion of the responses which a student makes each day to go unreinforced? Furthermore, the periods of time which elapse between the student's response and some of the meager reinforcements he does receive are frequently so long that most of the effect is destroyed. Think of the minimum 24-hour period before homework is handed back, for example. And, in the case where the only mark on the homework is "D," think how vaguely the reinforcement is related to any specific responses the student made.

This is the situation which B. F. Skinner commented on in his 1954 article in the *Harvard Educational Review*.[1] This is the situation which spurred his development of a machine capable of stimulating a student's response and then immediately delivering reinforcement. Dr. Skinner's work, in turn, caused a few psychologists and educators to dig out the old Pressey devices[2] from their 1926 archives or dust off self-trainers from World War II for a new look. A few others began to write and experiment with Skinner programs to teach psychology, spelling, algebra, and other subjects.

With accumulating national publicity for and against Skinner's teaching machines, researchers started experimenting with different methods of establishing the two fundamental conditions of learning in practical situations. The American Institute for Research produced experimental pro-

[1] Skinner, B. F., "The Science of Learning and the Art of Teaching," *Harvard Educational Review*, Spring 1954, pp. 86–97.

[2] See, for example, Pressey, S. L., "A Simple Device which Gives Tests and Scores and Teaches," *School and Society*, 1926, 23, pp. 373–376.

gramed textbooks, Norman Crowder came up with the "scrambled" book, and IBM turned the 650 into a "simulated teaching machine."[3]

An Air Force-sponsored conference on "The Automatic Teaching of Verbal and Symbolic Skills" at the University of Pennsylvania last winter drew about a hundred participants interested in development of, research in, programing for, or just hearing about teaching devices. At the 1959 American Psychological Association meeting there were three sessions, several demonstrations, and at least one party celebrating teaching machines. Two companies are offering teaching machines for sale, and one of them is publishing a new journal devoted exclusively to this topic.[4]

During these five years (1954-1959), the test publishers were noteworthy by their absence from the field. Yet they had already the best established medium for demanding student responses and even some initial experience in making their tests tell the student whether he was right or not.

True, some test makers had been saying for some time, "Don't bury your achievement tests in a file. Dig them out and capitalize on student interest in them. Get the test papers scored as quickly as possible and then go over the responses with the students so they will learn something from their experience.[5] This is an excellent practice and one to be encouraged, but it does not maximize the conditions for learning from the tests; i.e., it does not permit reinforcement to follow immediately upon the response.

Perhaps it was the word 'machine' which put the test makers off, for their stock and trade was in paper and pencils. But there is nothing that says the conditions or response-reinforcement can be obtained *only* with a machine.

In the immediate run of things, almost any good modern achievement test can become a useful learning situation by the simple addition of a device for telling students "right" or "wrong." The word 'modern' is used to distinguish the tests of basic skills and problem-solving ability from the older tests of straight recall of facts. In the case of the modern test, one could expect a reasonable amount of "transfer" of the learned behavior to new situations. The "recall" tests would produce very little transfer and would be useful only if one were interested in students learning the particular set of facts on the tests.

[3] See Galanter, Eugene (Ed.) *Automatic Teaching: The State of the Art* (New York: John Wiley & Sons 1959).

[4] *Automated Teaching Bulletin*, Rheem Manufacturing Company, 4631 Firestone Boulevard, South Gate, California.

[5] This is the thesis of the *Sequential Tests of Educational Progress Teacher's Guide* (Princeton, New Jersey: Cooperative Test Division, Educational Testing Service, 1959).

A number of methods are already available for providing reinforcement in a testing situation: the punch board self-scorer into which the student's answer sheet is locked, chemically treated paper so that the correct response is indicated when the student marks it with a special "ink," carbon paper devices, aluminum coating which the student erases to reveal information about the correctness of his answer. Many others should not be beyond the ingenuity of a good chemist or printer.

The addition of reinforcement to the standard achievement test should change immediately the regular testing situation into a positive rather than aversive experience for the students who sit through it.

In the long run, however, the greatest contribution can be made by the test maker through the development of tests designed specifically to teach. These tests would have characteristics somewhat different from the regular standardized achievement test (designed for evaluation, placement, etc.) which has only incidentally been equipped with reinforcing properties:

1. *Teaching tests would not have standard time limits and would be available in a greater variety of difficulty levels than current tests.* The major purpose of reinforcement devices is to increase the proportion of responses reinforced for *each* student and thus allow each student to proceed at his own rate along his own path of learning.
2. *Teaching tests would entail relatively complete coverage of the particular topic to be taught.* Most regular achievement tests just sample the behavior in a given subject domain.
3. *Teaching tests would allow the student to practice responses a number of times,* since frequency of reinforcement is related to strength of response.
4. *Teaching tests would sometimes fractionate a process into a number of small or subresponses,* since the aim of some teaching tests would be to build up relatively complex behavioral sequences rather than just to evaluate their outcomes.
5. *Teaching tests generally would be designed to yield a greater percentage of "right" responses than the average standardized achievement test,* even though (in this writer's opinion) any knowledge of results has reinforcing characteristics. Some of the techniques used by the Skinner group to ensure "correctness" include specific prompts, various kinds of review items, fading or vanishing items (cues gradually are withdrawn from item to item so that the student must rely more and more on himself), and, of course, careful arrangement of items from the simplest reasonable level to more complex levels.

6. *The responses to teaching tests might take a variety of forms; e. g., multiple-choice, free answer.* Since they would be checked immediately by the student himself, they would not have to be limited to the types used in most large-scale testing programs where convenience and reliability of scoring are major factors. The student's response on a teaching test might be writing out a short essay, points of which he would check against a comparison paper, or a French phrase.
7. *Elaborate security precautions would be unnecessary with teaching tests,* since the results of teaching tests would be primarily for the information of the student. It would be hoped that the teaching test materials would have enough intrinsic interest and gamelike properties to keep the student working along according to the rules, which would include not looking ahead to the right answer. In this case the "machine" might consist of no more than a file folder through which the student pulls his exercise, writing each response and then pulling the paper up a bit to see if he was correct. In any case, the teacher could check up on whether students were in fact learning the prescribed materials by administering a short "real" test to them from time to time.[6]

   If it is desired to prevent cheating, probably more of a problem with immature students, simple models of machines into which teaching test materials can be inserted have been designed, e. g., by Porter.[7] With such a device, the correct answer is safely hidden until the student's own response has been rolled to a point that no alteration can be made in it.
8. *Teaching tests would be accompanied by manuals for the teacher suggesting uses of the tests in the instructional program and classroom activities to supplement and further reinforce the learning from the tests.* These manuals would thus differ considerably from regular standardized achievement test manuals designed to help the teacher, counselor, or administrator interpret scores for evaluation, counseling, or placement purposes.

Can tests teach? Yes, providing the responses to them are reinforced. What they teach and how well they teach will depend on the skill and wisdom of their makers and the way in which they are used in the school. Just as there is no magic in television teaching *per se* (it can be as good or bad

[6] See Diederich, Paul B., "Self-Correcting Homework in English," *Proceedings of the 1959 Invitational Conference on Testing Problems* (Princeton, New Jersey: Educational Testing Service, 1960, in press).

[7] Porter, Douglas, "Some Effects of Year Long Teaching-Machine Instruction," *In Automatic Teaching: The State of the Art, op. cit.*, pp. 85–90.

as any other kind of teaching), so there is no magic in teaching machines or teaching tests. If they don't ask the right questions and provide appropriate reinforcement, the students are not going to learn the right responses. There is a kind of magic about learning, though, for student and teacher alike. Maybe good teaching tests can bring a little more of it into the classroom.

THE NATIONAL DEFENSE EDUCATION ACT ON GUIDANCE

Title V—Guidance, Counseling, and Testing; Identification and Encouragement of Able Students

Part A—State Programs:

The act authorizes the appropriation of $15 million for 1958–59 and for each of the three succeeding fiscal years for grants to State educational agencies to help them establish and maintain programs of guidance, counseling, and testing.

A State may participate by submitting to the Commissioner of Education through its educational agency a plan which sets forth—

1. A program for testing students in its public secondary schools and, where authorized by law, in nonpublic secondary schools, to identify students with outstanding aptitudes and ability, and the means of testing to be used.

   If the State agency does not have authority to pay for testing children in nonpublic secondary schools, the Commissioner of Education shall arrange for testing and pay full cost for 1958–59, and one-half the cost for the three succeeding years.

2. A program of guidance and conuseling in the public secondary schools to (*a*) advise students of courses best suited to their ability, aptitudes, and skills, and (*b*) encourage students with outstanding aptitudes and ability to complete secondary school, to take courses for admission to institutions of higher education, and to enter such institutions.

Part B—Counseling and Guidance Training Institutes

The act authorizes $6.25 million for 1958–59 and $7.25 million for each of three succeeding years and enables the Commissioner to contract with colleges and universities to conduct short-term or regular session institutes for the training of guidance and counseling personnel in secondary schools, and for the training of secondary school teachers preparing to engage in such conseling and guidance. Enrollees from public secondary schools are eligible upon application therefore to receive $75 a week plus $15 a week for each dependent for the period of their attendance at an institute.

—*School Review*, September 1959

ADVANTAGES AND DISADVANTAGES OF LARGE-SCALE TESTING PROGRMS

BY WILLIAM COLEMAN*

The growth of state and national testing programs throughout the country and the impact of the National Defense Education Act (NDEA) points up the need for educators to examine the merits and liabilities of large-scale testing programs. As a first step in this evaluation, the general functions of testing should be stated.

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General Functions of Testing

1. Tests help the teacher to provide information for counseling individual students. Abilities, levels of achievement, interests, and attitudes may be measured.
2. Test scores may be used by teachers to place students in special groups such as an advanced mathematics class or remedial reading. Their use for the selection of gifted students has grown substantially.
3. Tests may be used by teachers to evaluate curriculum content or methods. Ability, reading, and interest scores may be used to determine the level of content or the procedures that might be used.
4. Test results may be used to assess the outcome of instruction. The teacher may determine from test scores how well his students have learned a topical area or certain skills.
5. Test data may be used to help determine grades or whether measures of the student's capability and grades are frequently given on the basis of how well his achievement matches his ability.

6. Test results may be used as one of the means for selecting scholarship winners.
7. Test data may be used as one of the tools for determining whether students are qualified for admission to special schools or programs.
8. Tests may be used in research projects to establish comparable groups for experimentation, to evaluate outcomes, or to obtain new information.

Genesis of Large-Scale Programs

Historically, state-wide testing programs have usually been initiated as a project of the state university or a group of colleges interested in identifying high school students whom the institutions felt should be encouraged to attend college. Programs in a few of the states have been used to help determine whether the student's diploma should entitle him to unqualified admission to college. State testing programs as well as national programs are also used for selecting scholarship recipients. In view of these uses, most of the state testing programs have been confined to secondary schools, although a few states such as Iowa and Tennessee haxe extensive programs for elementary school students.

National testing programs usually exist for a particular purpose. The National Merit Scholarship Testing Program and the College Board Examinations are two examples. Other illustrations are the Selective Service Qualification Tests or the Westinghouse Science Talent Search Program.

Some of the test publishers have promoted national testing programs such as SRA's "Iowa Tests of Educational Development," Psychological Corporation's "College Qualification Tests," or the Educational Testing Service's "A.C.E. Psychological Examination" (being replaced by SCAT). And a large number of private schools, participate in a program conducted by the Educational Records Bureau.

Regional testing programs are quite rare, although the southeastern states have discussed this intermittently. Probably, most large cities have a centralized testing program as well as making standardized tests available on an optional basis to individual schools or teachers.

Characteristics of a Large-Scale Program

Large-scale testing programs may be described as generally having the following characteristics:*

1. They provide a limited number of selected tests to their constitu-

* Educational Testing Service, "Large-Scale Programs of Testing for Guidance," May 1958, describes the organization of large-scale testing programs and provides other helpful material on testing.

ents. The tests may be sold, loaned, or rented to participating schools.

2. In a number of cases, centralized programs have developed their own tests for distribution to participating schools.
3. Large-scale programs provide test processing services which may include scoring only, conversion of scores, preparation of lists of scores, item analysis, or statistical analyses.
4. Centralized programs provide aid in the use of test results by publishing bulletins, holding workshops, or providing consultant services.

Since these characteristics may also be applicable to local testing programs, they cannot be regarded as being distinct advantages of large-scale programs. In the next section, some of the distinct advantages of large-scale programs will be discussed. This will be followed by a section in which the principal disadvantages of large-scale programs will be described.

Advantages of Large-Scale Programs

1. By centralized purchasing of very large quantities the cost of testing materials may be substantially reduced. Orders of 50,000 or more tests of one form shipped in bulk quantities make it possible for test publishers to offer substantial discounts. Investment in booklets, answer sheets, and manuals can be very expensive for a small district using the materials only once a year for a few years before they become obsolete.
2. Centralized testing programs make available low cost machine scoring facilities. With rental of an IBM test scoring machine costing about $600.00 per year, and skilled operators required, it is estimated that at least 40,000 scores per year must be obtained to justify a scoring machine installation. If less than 40,000 scores are required per year, it is more economical for a school system to purchase scoring services from a central scoring service. This may be an IBM installation, the Machine Research Center at Iowa City when appropriate, or the system may wish to resort to hand scoring.
3. State or regional norms can be prepared making test results more useful for interpretation. National norms frequently are not appropriate for particular areas. Whenever the socio-economic level of the communities involved and the school characteristics deviate appreciably from the population used in the national norms local norms are needed. Large-scale testing programs are in an excellent position to develop state or regional norms. Thus, a school system

should find it possible to compare its test data against comparable school systems participating in the large-scale program.

4. Centralized programs usually have qualified individuals to conduct research studies aimed at improving the teaching program and the school program. Studies are needed to determine the predictive efficiency of the tests being used so that expectancy tables can be prepared. Data can be analyzed to determine strengths and weaknesses in the curriculum, or criterion studies may lead to the re-examination of objectives, grading practices, or educational outcomes. Individual system studies or cooperative studies can be made.
5. Centralized programs usually employ highly competent personnel who are more likely to select technically sound tests. Despite the recommendations of the American Psychological Association and the American Educational Research Association of standards for test publication, test manuals can be deceiving in their claims for a test. For example, there are many ways of estimating test reliability which may favor the test but which may not be appropriate. Validity by decree is still common; norms may sound impressive when the publisher states that ". . . every state in the Union was included . . . . ," but neglects to tell the reader how the sample within each state was selected.

Although other advantages of large-scale programs may be suggested, the writer regards the above five as probably the most important. It is now appropriate to discuss the major disadvantages of large-scale programs.

Disadvantages of Large-Scale Testing Programs

1. Large-scale programs tend to force conformity. For example, when an achievement test is selected, it is assumed that the objectives and instructional content of the test are fairly suitable for all schools participating. If the test is not in accord with the curriculum, there is the danger of the tail wagging the dog. Whatever is being measured may determine what is actually taught.
2. The tests that are selected are apt to be only those that are machine-scorable. Excellent evaluative instruments which exist that are not amenable to machine-scoring are thereby ignored. This also tends to eliminate the primary grades from the testing program and possibly the intermediate grades as well.*

* Although some educators are skeptical about using separate answer sheet tests below the seventh grade, Lindquist has demonstrated recently that fourth graders can handle separate answer sheets satisfactorily provided they are of nearly average ability or higher. Other studies support Lindquist's findings except for speed tests.

3. Large-scale programs usually find it difficult to return test scores immediately to participating schools. The time lag may vary from two weeks to two months or even more. The individual school or small system can usually do much better in scoring time. Long periods of waiting for test results diminish interest in testing and the results may lack timeliness for effective guidance or placement.
4. Although state-wide programs can provide better norms for a state than national norms, they will still be inadequate for local use. The variations in socio-economic background and the abilities of students are too great within a state or a city, such as Los Angeles, to make centralized norms appropriate for prediction, placement, or selection in a particular school situation.
5. Tests selected centrally often have less appeal and are of less interest to the teacher compared to evaluative instruments he has personally helped to select. Thus, there is less likelihood that the teacher will make use of the results or that the tests may be as appropriate for a particular situation.

Summary

The advantages of large-scale programs include providing test materials and machine scoring at a lower cost. State or regional norms are more easily developed and competent consultants are available for assisting in selection and conducting research studies.

On the other hand, large-scale programs tend to force conformity and may overlook the most appropriate tests. They may be slower in returning test scores and their norms may be inadequate for regional use. These advantages and disadvantages must be weighed by each school system in the perspective of local goals.

THE PLACE OF TESTING AND EVALUATION IN LEARNING

BY HOWARD A. BOWMAN*

Occasionally, when this writer has spoken to a group of teachers on the subject of measurement and evaluation, someone rises to ask, "Why do we have evaluation?" What such an individual probably means is, "Why do we, in our school system, have the particular kind of an evaluation program that we have?" The question as originally asked always elicits the same reply, which is that evaluation is one of the most basic of human activities.

Almost every human choice, unless deliberately made on the basis of chance, results from evaluation of some sort. Often, such evaluation is of the most casual sort, and one is scarcely conscious of having made it. Moreover, the basis upon which an evaluation is made often is somewhat irrelevant to the totality of the problem which has elicited the evaluation. Thus the question should not be, "Why do we have evaluation?" Rather, more appropriately it should be "What kinds of evaluation shall we have?"

It is, perhaps, unfortunate but understandable that tests have too frequently become synonomous with evaluation. In certain instances, as, for example with various physical tests on inanimate objects, there is no good reason why the two may not be considered synonymous. However, the problem of evaluation in learning is substantially different, mainly because people are primarily involved. It is also different because of its background, reaching back to the dawn of history in which human beings are satisfied with the kind of evaluation based on feelings rather than facts. It has been Human opinion might be placed in the same category.

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Please note that the question raised above concerning the kinds of said that it is easier to move a cemetery than it is to change a curriculum. evaluation was phrased in the plural. The traditional kind of formal evaluation in schools is the report card. In recent years the report card has been, in some schools, supplanted by the "interview" or "conference," in which the teacher gives the good (or bad) news to each pupil's parents. This, of course, is also evaluation. Lying behind the report card or conferences are numerous minor evaluations of pupil status or progress, likes or dislikes, sins or salvations, errors or accuracies, and so on, until the teacher's mind becomes so crammed with them that the chief problem is deciding which shall hold sway at this "moment of truth."

Unfortunately, there is evidence to show that teachers rely at times more on their memories of small incidents, performances, assignments, recitations, than they do on records of them. This is even more apt to be true if the school employs a marking system which requires the teacher to make a quantitative evaluation of "character traits." Here opinion, unsupported by fact, may run rampant.

The foregoing analysis is no protest against opinion. Opinion is a powerful and worthy instrument. However, to be worthwhile, opinion must be informed. In the present context, opinion should be solidly backed by evidence, gathered in a manner appropriate to the situation. Memory can not be trusted. Evidence should be recorded, and to the best of the teacher's capacity such evidence should be as objective as possible.

What then is the relationship of evaluation to learning? Learning is an accretive process, and for each new 'layer' of skills, facts, attitudes, and knowledges, the learner must be properly prepared. It is precisely in judging the degree of preparation which exists that the teacher should accomplish one of his more important functions. This diagnosis should be accomplished with skill and insight. It should not be carelessly made of unsecured opinion.

The teacher has many opportunities to evaluate each pupil's performance. For example, the class is taught how to perform a particular operation in mathematics and each pupil in his assigned work demonstrates that he can perform the operation *at that time*. However, unless the operation has some relationship to the totality of instruction in that subject, it was not worth teaching. Assuming then, that this relationship to the totality of instruction exists, the question arises, "How well will the pupil be able to perform this operation tomorrow, next month,, or next year, and in context, not in isolation?" This is where the function of the test arises. A test is a sampling of presumptive learnings. The word "sampling" implies a greater range of learnings than may conveniently be tested *in toto*. In turn, this implies a time relationship between the extent of the learnings to be

sampled and the length and complexity of the test. Test length and complexity are largely governed by the amount of time the teacher is willing to devote to the process of making, administering, scoring, and interpreting the test. If the test is a commercial one, there are some obvious short cuts. But almost always the commercially prepared test will suffice only for relatively long periods of instruction—a semester, or a year, or even more. It is not economically feasible for a publisher to produce a test for shorter units. It is feasible and desirable for the teacher to do this, and most teachers do.

What is the relationship of the teacher-made test to learning? There are few teachers who do not, at intervals throughout the school year, devise tests or quizzes. From the scores which pupils attain on these, they hope to be able to draw conclusions as to how well these pupils have learned that which was presumed to have been taught. These teacher-made tests will not have, on the whole, the degree of excellence of professionally made instruments. Teachers do not have the time, the knowledge, or the facility for the detailed analysis which professional test makers count on to reduce errors of measurement in the instruments they produce. On the other hand, the teachers have factors working to their advantage. They are closer to what has actually been done, and they are certainly better acquainted with the objectives of instruction and the philosophy behind the work in their own classrooms.

The teacher can profit by the techniques which have been devised by others, building these techniques upon his already excellent foundation of teaching skill, his intimacy with the philosophy of education which prevails in his school, and his pervasive feeling of what he is trying to do in his classroom. This writer has known a number of teachers who have concluded that the only way they could do a decent job of evaluating the progress made within the classrooms for which they were responsible was to learn how to make tests. Undoubtedly thousands of others have reached the same conclusion. We still have to worry about those who make the kind of test in which, automatically, "ten right answers is an A, nine a B, eight a C, seven a D, and if you have fewer than seven correct you fail."

There are certain steps which the teacher may profitably take when constructing tests for classroom use. Some of them have more philosophical overtones than do others, but all are practical and tangible.

1. Come to a decision as to the real purposes of a given unit of work and write out these purposes. What skills, attitudes, knowledges, or other factors are to be developed in this unit?
2. In connection with each purpose, answer the question: What evidences of attainment of this objective are acceptable and subject to measurement within the scope of your skill at writing test items?

3. Borrow or buy one of the several available books which give examples of various kinds of test items, and which tell how to put together a test. Such a book is to be used not for mastery, necessarily, but as a reference source. More than one such source would be helpful if available, and faculty or departmental study groups will provide more good outcomes than the same number of people working independently.
4. Try writing various kinds of test items and use them with the class. Some may be subjective, some objective, and some in between. Try to observe the rules laid down in the reference book in use, especially with respect to scoring the items. One of the easiest ways to get into trouble is to use both positive scores (for correct responses) and negative scores (for incorrect items) on, say, a matching item. It is much better to play safe and use only positive scores.
5. Keep a record of how pupils respond to each item. This is easily done if each item is written on a card. The data can be recorded on the back of the card. The principal matter is to realize that the pupils who do best on the test as a whole should also tend to do better on each item than do those whose total scores are lowest. A crude but satisfactory form of "item analysis" is to divide the scored papers into thirds. On each item, more of the pupils in the top third should respond correctly than do those in the lowest third. If the opposite is true, that item is detracting from the measuring capacity of the test and should be eliminated.
6. Save the good items in a card file. Steps one through five are laborious at the time, but, over the long haul of several years, the accumulation of usable test items will save many hours. Moreover the teacher's function in the evaluative process will have improved and he will be a better teacher.
7. As a final step, learn that when a test is first put together, there is no way of knowing how difficult it is. There are many variables to take into account, and these are not always apparent. Don't fall into the earlier mentioned trap of assuming that it is possible to tell in advance how many correct responses constitute a level of "C" or "A." Let the test scores provide this information. Better still, let the scores of several successive tests provide it. The more times one measures, the better his chances of measuring correctly.

Learning and following the foregoing steps will not make the teacher a test expert. It will, however, help him to be a better teacher because it will make him more aware of the strong and weak spots in the learning of his pupils. If the weak spots are known they can be "beefed up," a process

which may require no more than reallocation of time spent on various aspects of the subject. Moreover, an additional advantage lies in the fact that pupils are more satisfied that a fair system has been used to rate them.

In summary, the following points have been made to support the thesis that testing and evaluation have an important place in learning.

1. Evaluation is a basic human activity; teachers are constantly evaluating whether or not they realize it.
2. Much evaluation carried on by teachers is informal and subjective. However, informed opinion is a powerful and proper instrument.
3. The teacher has the final job of evaluating a semester's work or a year's work by placing a mark on a report card. His opinion of the pupil's achievement should be solidly backed by evidence in recorded form.
4. All kinds of pupil performances, properly evaluated, provide the necessary evidence.
5. Tests are the source of one important kind of evidence. Unfortunately, too many teacher-made tests are constructed without a realization of what constitutes a good test, and are improperly interpreted. This need not be so.
6. Making good tests is not easy, but neither is it extremely difficult. The teacher can learn to do it, and both he and his pupils will profit as a result of the exercise of this skill.

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